2018

Annual Activity Report

Directorate-General for Energy

Foreword

Introductory message by the Director-General

2018 was a particularly significant year for DG Energy. We positively concluded the negotiations on the eight legislative proposals under the Clean Energy for All Europeans Package adopted by the Commission in November 2016, thereby making a decisive contribution to one of the European Union top priorities: the completion of the Energy Union! These legislative initiatives aim to shape European energy policy and our energy system for the years to come, making the clean energy transition a reality, making good progress towards the Paris Agreement goals but also ensuring further economic growth and the creation of new jobs and opportunities.

Moreover, DG Energy continued to carry out its crucial work in all fields of energy policy, reinforcing energy security, pursuing the principle of 'energy efficiency first', supporting Europe to be a world number one in renewables, guaranteeing a fair deal for European consumers and addressing the societal issues arising from the clean energy transition.

This Annual Activity Report (AAR) provides a detailed outline of our achievements in 2018 relative to the objectives set in DG Energy's Strategic Plan 2016-2020 and Annual Management Plan 2018. While part 1 sets out our main policy achievements in the past year, part 2 provides insights on how we reached these and provides information about the management of the allocated resources as well as the internal organisation of the Directorate-General.

For more information on the activities of DG Energy, please visit our website:

https://ec.europa.eu/energy/

I wish you an interesting reading!

Dominique Ristori

Director-General of DG Energy

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THE DG IN BRIEF

Under the political guidance of Commissioner Arias Cañete and Vice-President Šefčovič, the Directorate-General for Energy (hereafter 'DG ENER' or 'the DG') is responsible for developing and implementing the **European energy policy**.

DG ENER is responsible for developing and implementing the energy-related aspects of the **Energy Union Framework Strategy**[1], one of the ten priorities of Commission President Juncker. DG ENER proposes, implements and reviews legislation and initiatives under the Energy Union Framework Strategy, focusing on its five key dimensions:

- Energy security, built on solidarity and trust between EU countries
- A fully functional internal energy market
- Energy efficiency as a contribution to moderation of energy demand
- Decarbonisation of the economy, including renewable energy
- Research, innovation and competitiveness

The DG promotes secure, sustainable, competitive and affordable energy for all EU citizens. It does so by creating the conditions for an integrated energy market which works for citizens, by ensuring energy efficiency first and making the EU a world leader in renewable energy sources. Its policies contribute to the decarbonisation of the European economy and help the EU to meet its ambitious 2020 and 2030 energy and climate targets.

Among its other tasks, the DG proposes legislation and ensures implementation of the EU legislative framework for the safe use of nuclear energy, ensures the application of the Euratom Treaty, and supports the secure and peaceful use of non-power applications using nuclear material. Finally, the DG contributes to the development of nuclear fusion energy technologies through the International Thermonuclear Experimental Reactor (ITER) project.

In 2018, the DG ensured good and sustained progress in achieving the specific objectives set out in its Strategic Plan 2016-2020 which are in line with President Juncker Priorities and in particular the Energy Union. With the adoption of the "Clean Energy for all Europeans package" the DG has contributed to building the most important legislative framework in the field of energy in the history of Europe. The DG achievements covers all five dimensions of the Energy Union as well as the BREXIT preparedness activities and legislation.

The main spending programmes in 2018 that supported the work of the DG ENER were:

- The ITER project and ITER related activities through Fusion for Energy (F4E) programme, which accounted for more than half of DG ENER's spending in 2018 (53.55% of total spending or EUR 659.91 million). ITER aims at demonstrating fusion as a viable and sustainable source of energy. ITER is being built in South of France with the support of seven international partners that represent half of the world's population (Euratom, the United States, Japan, South Korea, China, India and Russia). The Euratom contribution to the ITER International Organization (IO) for the construction phase of the project (EUR 6.6 billion until 2020) is channelled through the Joint Undertaking, Fusion for Energy, located in Barcelona, Spain.
- The 'Nuclear Decommissioning programmes' for nuclear power plants in Bohunice (Slovakia), Ignalina (Lithuania) and Kozloduy (Bulgaria), accounting for 15.90% of DG ENER's spending. Financial support is managed either through national agencies or by the European Bank for Reconstruction and Development (EBRD).
- The 'European Energy Programme for Recovery' (EEPR), accounting for around 12.91% of DG ENER's spending. EEPR was established in 2009 to address both Europe's economic crisis and European energy policy objectives. EEPR spending is

[1] COM(2015) 80 Final, 25.2.2015.

used to co-finance EU energy projects relating to gas and electricity infrastructure, offshore wind energy and carbon capture and storage.

- Research programmes (Intelligent Energy – Europe Programme, 7th Framework Programmes for Research and Technological Development and Horizon 2020), accounting for around 3.5% of DG ENER's spending. These research programmes are directly contributing to the achievement of the Europe 2020 targets by supporting projects for the development of renewable technologies, decarbonisation and energy efficiency.
- The 'Trans-European Energy Network' (TEN-E), accounting for around 0.15% of DG ENER's spending via the Connecting Europe Facility (CEF). The programme supports the effective implementation of the internal energy market by financing trans-European networks to carry electricity and gas.
- DG ENER also devotes 1.56% of its budget to Euratom related tasks such as Nuclear safeguards.
- DG ENER's contribution to the CEF Debt Instrument accounted for 7.25% of DG ENER's spending or EUR 89.29 million. CEF-DI provides innovative financial instruments for leveraging EU investment and attracting new sources of funding for infrastructure projects. The contributions are invested in a securities portfolio that supports the issuance of EIB managed loans.

The European Fund for Strategic Investments (EFSI) 2015-2020 finances strategic energy infrastructure, energy efficiency, and renewable energy projects. As of 31 December 2018, a substantial number of EFSI projects have been approved, for a total investment of €243.8 billion, of which €68.3 billion directly targeting the energy sector. The energy sector ranks second in EFSI infrastructure financing, where it accounts for around 28% of EFSI operations. Given its success, an amending regulation entered into force in 2018, extending the investment timeline from mid-2018 to the end of 2020 and increasing the investment target to at least EUR 500 billion. In addition, improvements aim to ensure that the fund's support covers as many EU countries as possible and that it finances a wider range of sectors than before, including those related to climate-related action.

DG ENER has **667 staff**, including external staff (contract agents and SNEs). Three Directorates (A, B and C), accounting for half of the staff, are based **in Brussels**: they deal with energy policy coordination and related statistical and economic analysis, international relations, inter-institutional and communication aspects, internal energy market and infrastructure, renewables, research and innovation, and energy efficiency. The other two Directorates (D and E) are based **in Luxembourg** (with the exception of the ITER Unit, which is part of Directorate D but based in Brussels) and cover nuclear safety, spent fuel and radioactive waste, decommissioning, radiation protection and ITER as well as nuclear safeguards.

The work of DG ENER is supported by the 'Shared Resources Directorate' (SRD), shared with and technically assigned to DG MOVE, which has 132 staff in 2018 in Brussels and Luxembourg, dealing with financial resources (including budget), operational finances and project financing, informatics and logistics, assurance and supervision and with document management/archiving.

All this work is supported by the two Executive Agencies for Innovation and Networks (INEA) and for Small and Medium-sized Enterprises (EASME); by the Euratom Supply Agency (ESA); by the regulatory Agency for the Cooperation of Energy Regulators (ACER); and the Fusion for Energy (F4E) Joint Undertaking.

EXECUTIVE SUMMARY

The Annual Activity Report is a management report of the Director-General of DG ENER to the College of Commissioners. Annual Activity Reports are the main instrument of management accountability within the Commission and constitutes the basis on which the College takes political responsibility for the decisions it takes as well as for the coordinating, executive and management functions it exercises, as laid down in the Treaties[2].

a) Key results and progress towards the achievement of general and specific objectives of the DG (executive summary of section 1)

In 2018, the key challenge for DG ENER was to support and ensure positive conclusions of the **inter-institutional negotiations on all eight proposals of the Clean Energy for All Europeans Package** adopted by the Commission in November 2016. The revised **Energy Performance of Buildings Directive**, **Renewable Energy Directive** recast and **Energy Efficiency Directive** as well as the **Regulation on the Governance of the Energy Union entered into force in 2018**. Furthermore, a **political agreement** was reached on the remaining four proposals on the **Electricity Directive and Regulation**, **Risk Preparedness** and **ACER Regulations**, which underlines the huge progress made. This great achievement would have not been possible without the strong commitment and dedication of the DG staff.

The actions conducted by DG ENER in 2018 contributed to **concluding the ambitious energy reforms set in 2015 by the Energy Union across all its five dimensions**. In particular, new legislation was introduced in the areas of energy security, solidarity and trust; a fully integrated European energy market; energy efficiency contributing to moderation of demand and decarbonisation of the economy (including promotion of renewable energy). **The DG delivered on President Juncker's priority to build a resilient Energy Union with a forward-looking climate change policy** and contributed to the other priorities of the current Commission, most notably to providing a new boost for jobs growth and investment. At the same time, DG ENER contributed to deliver on the objective of ensuring proper enforcement of the existing energy acquis by closely following and ensuring the implementation of legislation in the EU Member States.

Key achievements 2018 grouped by the six specific objectives of the DG's Strategic Plan:

Concerning **specific objective 1: Contribution to security of supply, based on solidarity and trust**, in November 2018, a **political agreement was reached on the proposed Regulation on risk preparedness in the electricity sector** (one of the Clean Energy legislative proposals). The new Regulation focuses on how to secure the resilience of the electricity system as a whole and how to manage electricity crises when they occur. It ensures that all Member States put in place the appropriate tools to prevent, prepare for and manage these situations in a spirit of solidarity and transparency and introduces common methodologies at European level to identify crisis scenarios and assess short term and seasonal adequacy. Moreover, the **Directive on emergency oil stocks was amended in order to modernise the method to calculate the minimum stocks that Member States must keep accessible at all moment on the EU territory**. To facilitate the implementation of the new Security of Gas Supply Regulation, the Commission adopted a Recommendation on the technical, legal and administrative arrangements that Member States must subscribe to ensure an effective solidarity and carried out a number of other actions with the Gas Coordination Group. The Commission organised, with the Austria Presidency, a conference on cybersecurity in the energy sector to identify the specific characteristics and needs of the sector.

[2] Article 17(1) of the Treaty on European Union.

DG ENER also contributed to the **Commission's initiative on strengthening the international role of the euro by issuing a Commission Recommendation on the use of the euro in energy transactions**.

In the international field, important security of supply-related initiatives took place in 2018. The Commission pursued its efforts to support Ukraine in its gas sector reform. Through trilateral talks at both political and technical levels, the dialogue with and between Russia and Ukraine on gas transit issues could be kept open. The **US and the EU also agreed to reinforce their strategic cooperation with the view to develop the imports of LNG** from the US to Europe in view of further diversifying its energy supply.

Given the changing geopolitics of the global energy transition, DG ENER worked on a **Joint Declaration between the EU and the International Solar Alliance for cooperation on solar energy that was signed on December 2018, at the COP 24 in Katowice**, and successfully launched the EU-Africa High Level Platform for Sustainable Energy Investments in Africa. DG ENER also adopted a Communication on a credible enlargement perspective for and enhanced EU engagement with the Western Balkans.

Regarding the work on **specific objective 2: Further work towards a well-functioning and fully integrated internal energy market, including with interconnectors**, 2018 was a major year as **the negotiations on the recast Electricity Directive and Regulation and the recast ACER regulation were finalised** with the political agreement reached in December 2018 (all three legislative proposals under the Clean Energy package). Moreover, the final adoption of the third list of designated Projects of Common Interest was adopted in March 2018. DG ENER continued its work on the potential harmonisation on demand-side flexibility, energy-specific cybersecurity issues and interoperability of consumer data.

Major interconnectors, such as the Germany-Netherlands electrical interconnection, **were completed in 2018 thanks to the EU support linked to the TEN-E regulation framework.** Some new projects could also be directly supported by the Commission like the Biscay Bay electrical interconnection or the LNG terminal in Cyprus.

Important progress was made regarding the Clean Energy enabling framework: the **'Clean Energy for EU Islands Initiative'** is fully operational, its Secretariat was set up in June and pilot islands were selected; the **'Coal Regions in Transitions Platform'** is fully operational and assistance to the pilot regions in preparing transition strategies has started; the **Covenant of Mayors** passed the 1000 mark in terms of cities committed to 2030 energy and climate targets; and the **EU Energy Poverty Observatory** published its first pan-European report on energy poverty.

In relation to **Specific Objective 3: Promoting the moderation of energy demand**, a major achievement was the **adoption by the co-legislators of the revised Energy Performance of Buildings Directive in June 2018**. This was the first legislative proposal of the Clean Energy for All Europeans Package that entered into force. In December, **the revised Energy Efficiency Directive was adopted** and entered into force just before the end of the year. Important progress was also made in the area of products, where work advanced well on revising **ecodesign** and **energy labelling requirements,** including the revision of the five 'priority' product groups - dishwashers, washing machines, refrigerators, lighting and televisions**.** As part of the Commission's overall preparations for Brexit, in 2018 DG ENER has prepared a **legislative proposal for Brexit preparedness** concerning a technical amendment to the Energy Efficiency Directive and Governance Regulation, **adapting the absolute energy consumption values** for the Union's 2030 Energy Efficiency target to a Union of 27 Member States.

As concerns **Specific Objective 4: Promoting the decarbonisation of the EU energy**

mix and the increase of energy production from low Carbon Energy Sources, in particular renewables, work in 2018 focused on the negotiations on the recast of the Directive on the promotion of the use of energy from renewable sources (**Renewable Energy Directive**). A provisional agreement was reached in June 2018 and the co-legislators signed the final text in December. The **Renewable Energy Directive was published in the Official Journal on 21 December** with an entry into force three days later and transposition by 30 June 2021. Complementary work also focused on the preparation of a proposal revising the **Connecting Europe Facility Regulation**, which includes *inter alia* a new element on cross-border projects in the field of renewable energy.

Relevant progress was also made on promoting **regional cooperation on renewables** including within different High Level Groups such as North Seas, the Baltic Energy Market Interconnection Plan (BEMIP) and Central and south Europe Connectivity (CESEC) region. **EU international cooperation** on renewable energy continued to grow in 2018. This included bilateral dialogues and exchanges with partner countries such as the EU-Ukraine Forum on renewables as well as specific work with Algeria, Iran, Vietnam and Pakistan for example.

With regards to **Specific Objective 5: Tapping the job and growth potential of the energy sector and further developing energy technologies (Horizon 2020), including ITER and the safe and secure use of nuclear energy**, DG ENER presented several initiatives in 2018. These include *inter alia* the follow-up of the **2017 energy prices and costs report**, which was presented to various stakeholders and work on the implementation of the Strategic Energy Technologies Plan, which continued throughout the year. International cooperation, notably in the context of the Clean Energy Ministerial, was intensified.

Further, in 2018 DG ENER continued to ensure an effective implementation of the **nuclear safety and radiation protection legal framework**. In particular, DG ENER worked, in close collaboration with the Member States' regulatory authorities within the European Nuclear Regulatory Safety Group (ENSREG), on the preparation and **implementation of the first Topical Peer Review (TPR) on "Ageing management of nuclear power plants and research reactors" under the revised Nuclear Safety Directive**. The **nuclear decommissioning assistance** programmes in **Bulgaria**, **Lithuania** and **Slovakia** continued to progress substantially and proposals for the continued co-financing of these programmes under the new multiannual financial framework (MFF) 2021–2027 were adopted. The implementation of nuclear safeguards in 2018 allows to conclude that there has been no potential diversion of nuclear materials from their intended use and that all legal obligations towards third countries as well as the IAEA have been met.

In 2018, **good progress was achieved in the construction of the ITER machine** and in the implementation of the Broader Approach collaboration with Japan. The Commission proposed to allocate EUR 6.07 billion to finance the European participation in ITER and adopted a specific legislative proposal for the implementation of this funding in the next MFF, following Conclusions of the EU Council mandating the Commission to approve the new baseline at an ITER Council meeting at Ministerial level. DG ENER took important steps to improve the supervision and governance of the ITER project, *inter alia* by signing a new Administrative Agreement with F4E at the end of 2018.

Concerning **Specific Objective 6: Implementation and follow-up on the overall Energy Union strategy**, the DG focused its work on finalising the negotiations of the Governance Regulation (one of the Clean Energy legislative proposals). **The Governance Regulation constitutes the first horizontal piece of legislation at EU level covering all energy sectors and including climate policy**. It was published in the Official Journal on 21 December with an entry into force three days later, and a deadline of 31 December 2018 for the Member States to notify their **draft National Energy and Climate Plans (NECPs)**. Throughout 2018, in order to facilitate the timely notification by the Member States of the draft NECPs, DG ENER provided continued technical

assistance. The first NECPs were submitted on the last day of 2018 and define national targets, investment priorities, and policy and measures until 2030.

In 2018, DG ENER prepared and presented, in cooperation with DG CLIMA, the **Long-term Energy and Climate Strategy for Reducing Greenhouse Gases in line with the Paris Agreement: "A Clean Planet for All"**. The Strategy shows how Europe can lead the way to climate neutrality while ensuring social fairness for a just transition.

With all these important accomplishments in 2018, DG ENER continued to contribute to the overall achievement and delivery of President Juncker's priority of a resilient Energy Union with a forward-looking climate change policy and made progress on all six specific objectives set out in the DG's Strategic Plan 2016-2020 and the Annual Management Plan 2018[3]. **With the finalisation of the negotiations on all proposals of the Clean Energy for All European Package, DG ENER contributed to accelerating the modernisation of Europe's economy**. The new legislation under the Clean Energy Package will allow European consumers, workers and business to benefit fully from the energy transition to a low-carbon and energy efficient economy while ensuring that this transition is achieved in a socially fair manner.

Challenges and remedial actions

With the aim of facilitating the clean energy transition, DG ENER has launched the Clean Energy for all Europeans Package covering legislation in all energy dimensions. In the context of inter-institutional negotiations, one of the key challenges of the year was to ensure that all provisions included in the final text adopted by the co-legislators were consistent and coherent. This was particularly challenging for the Governance Regulation which includes horizontal provisions covering all the other energy dimensions, sectorial legislation and reporting obligations for Member States. In order to overcome these challenges, the DG implemented several ***remedial actions*** *such as regular internal exchange of views among the units involved and external meetings with other Commission services and the co-legislators. Moreover, appropriate participation from the relevant operational units was ensured in all trilogues. As regards reporting obligations, DG ENER and DG CLIMA are working closely together to streamline Member States reporting on energy and climate.*

The key results achieved in the framework of each of the six specific objectives of DG ENER are summarised in the following table:

Specific objective	Main results in 2018
***Specific Objective 1*: Contribution to security of supply, based on solidarity and trust**	- *Political agreement of the Regulation on Risk Preparedness in the electricity sector* - *Amendment of the Oil Stocks Directive*
***Specific Objective 2*: Further work towards a well-functioning and fully integrated internal energy market, including with interconnectors**	- *Political agreement Electricity Directive and Electricity Regulation* - *Adoption of the ACER Regulation* - *Selection and award of grants for Projects of Common Interest (PCIs) under CEF* - *Establishment of the annual priority lists for 2018 for the development of network codes and*

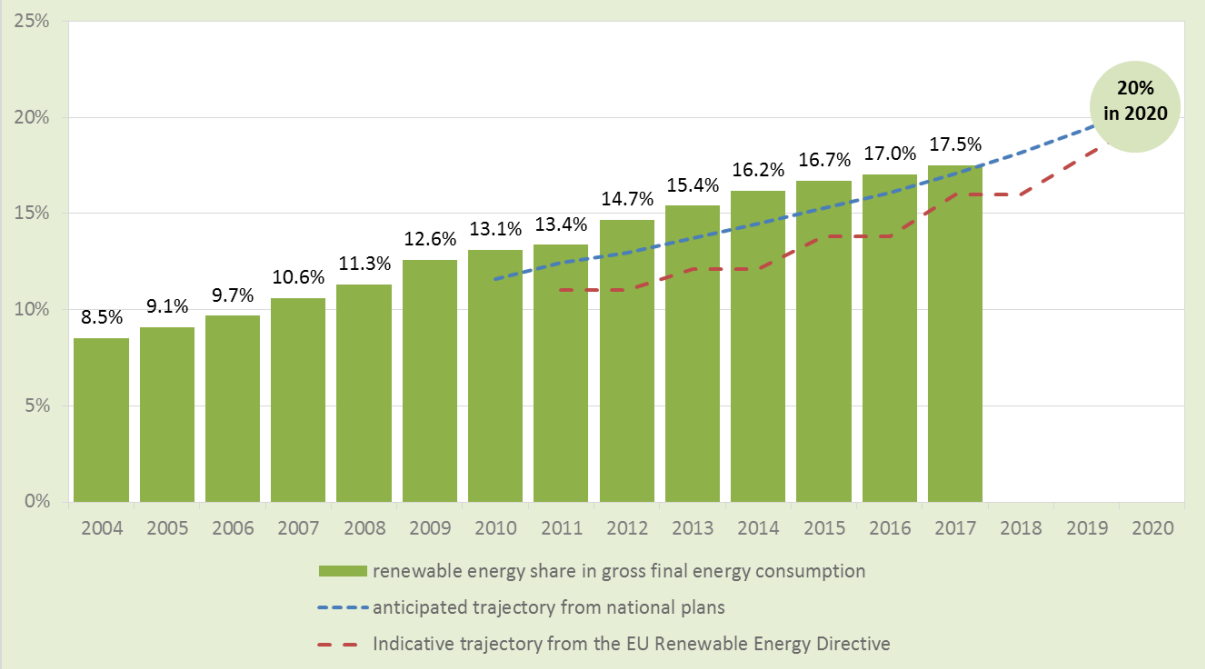
[3] Annual Management Plan 2018, DG ENER, available at: https://ec.europa.eu/info/sites/info/files/file_import/management-plan-ener-2018_en.pdf.

	guidelines
***Specific Objective 3*: Promoting the moderation of energy demand**	- *Entry into force of the Energy Performance of Buildings Directive* - *Entry into force of the Energy Efficiency Directive* - *Legislative proposal reviewing Regulation (EC) No 1222/2009 on the labelling of tyres* - *Preparatory work on Ecodesign and Energy Labelling proposals*
***Specific Objective 4*: Promoting the decarbonisation of the EU energy mix and the increase of energy production from low Carbon Energy Sources, in particular renewables**	- *Entry into force of the Renewable Energy Directive* - *Proposal revising the Connecting Europe Facility Regulation, which includes inter alia a new element on cross-border projects in the field of renewable energy.* - *Decisions on the "Better Biomass (NTA8080)" and "KZR INiG System" schemes for demonstrating compliance with the sustainability criteria under Directives 1998/70/EC and 2009/28/EC*
***Specific Objective 5*: Tapping the job and growth potential of the energy sector and further developing energy technologies (Horizon 2020), including ITER and the safe and secure use of nuclear energy**	- *Report on energy prices and costs in European Commission* - *Implementation of 1st Topical Peer Review on Ageing Management of Nuclear Power Plants* - *Second Report on the implementation of Council Directive 2006/117/Euratom on the supervision and control of shipments of spent fuel and radioactive waste* - *Effective implementation of the reinforced EU nuclear safety and radiation protection legal framework* - *Report on the mid-term evaluation of the nuclear decommissioning assistance programmes and adoption of proposal for the continued co-financing of the programmes under the new MFF* - *Supervision and governance of ITER improved; adoption of proposal on the financing of European participation in ITER under the new MFF* - *Continued cooperation with Iran on nuclear safety, in support of the implementation of the Joint Comprehensive Plan of Action (JCPoA)* - *Implementation of Euratom safeguards*
***Specific Objective 6*: Implementation and follow-up on the overall Energy Union strategy**	- *Entry into force of the Governance Regulation* - *Communication on the Long-term Energy and Climate Strategy for Reducing Greenhouse Gases in line with the Paris Agreement: "A Clean Planet for All"* - *Recommendation on the international role of the euro in the field of energy*

b) Key Performance Indicators (KPIs)

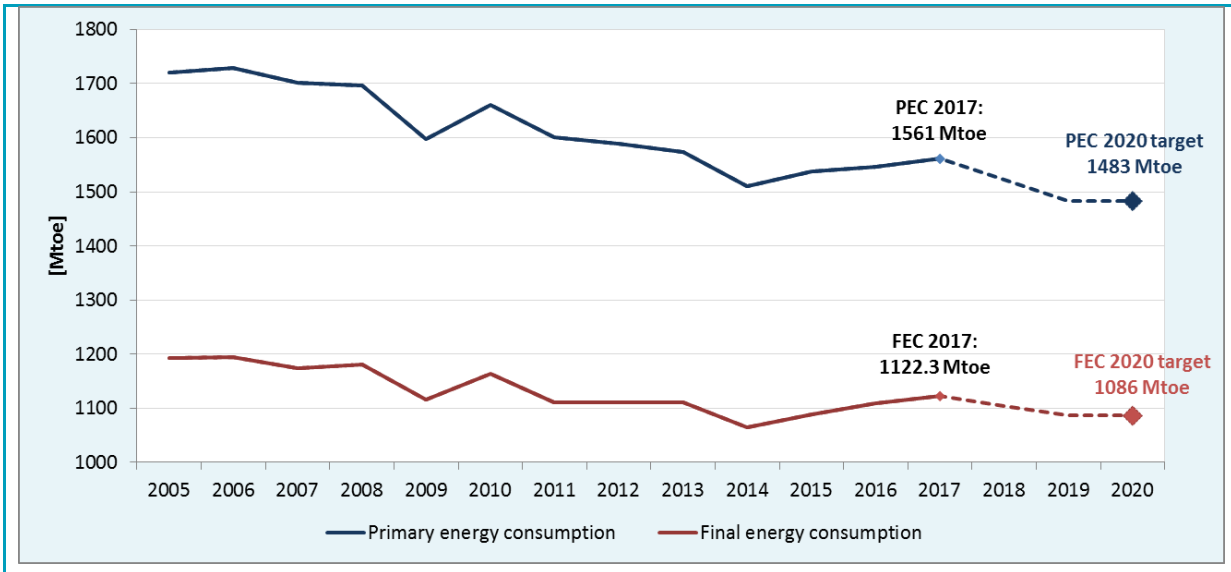
DG ENER has chosen five key performance indicators in its Strategic Plan 2016-2020 to monitor the policy performance and the DG's most significant achievements over time.

DG ENER's Key Performance Indicators:		
Key Performance Indicator	**Target (or milestones)**	**Latest known results as per Annual Activity Report**
Most relevant KPI 1 **Renewable energy share (RES) in gross final EU energy consumption (%)** *(source: Annex 1b of Dir. 2009/28/EC)*	20% by 2020	RES share in 2017: 17.52% (Eurostat data)[4]



Most relevant KPI 2 **Energy Efficiency** **Primary energy savings achieved in 2020 measured against the baseline (%)** *(source: Article 3 of Directive 2012/27/EU and NEEAPs 2014)*[5]	20% by 2020 Primary energy consumption not more than 1 483 Mtoe Final energy consumption not more than 1 086 Mtoe	1 561 Mtoe in 2017 In 2017, the primary energy consumption of the Union was only 5.2% above its primary energy consumption target of 1 483 Mtoe for 2020. In 2017, the final energy consumption (1 122.3 Mtoe) of the Union was 3.3% above the final energy consumption target of 1 086 Mtoe for 2020[6].

[4] Data for 2017 is still provisional.
[5] Baseline is PRIMES 2007 in 2020, which includes policies to be implemented up to 2006 with an oil price of $61 per barrel and reference year 2005. Calculated as Gross Inland Consumption minus Final Non-Energy Use Consumption. Source: Eurostat, Commission studies.
[6] Data for 2018 is not yet available.



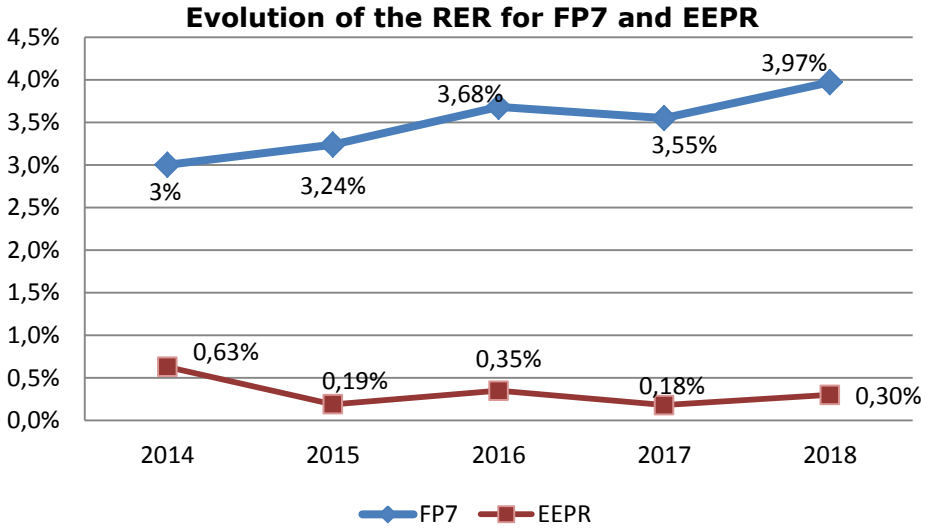
Most relevant KPI 3 **Degree of Energy prices convergence in the EU[7]**	Convergence of retail electricity and gas prices both for industry and household in the EU internal energy market.	Latest data 12/2017: Standard deviation for industrial consumer having a medium level of annual electricity consumption (between 500 MWh and 2,000 MWh): December 2012: 0.3095 December 2013: 0.2788 December 2014: 0.2884 December 2015: 0.2841 December 2016: 0.2472 December 2017: 0.2648 December 2018: 0.2678[8] Standard deviation for industrial retail natural gas prices for medium level of annual gas consumption (between 2,778 MWh and 27,880 MWh): December 2012: 0.1680 December 2013: 0.1502 December 2014: 0.1162 December 2015: 0.1373 December 2016: 0.1577 December 2017: 0.1516 December 2018: 0.1730[9]

[7] These indicators represent the ratio of the most and the least expensive EU Member State regarding the retail electricity and gas prices households and industrial consumers pay (data are given half-yearly, the last available one represents the first half of 2014). The aim of presenting of this indicator is to provide a metrics for the convergence of retail electricity and gas prices in the EU internal energy market, decreasing ratios should result in better convergence.

[8] While there is no single reason for the slowdown of electricity price convergence in 2018, wholesale electricity prices that strongly influence energy supply costs within retail prices also showed larger deviations in this period, mainly due to a general increase in fuel costs and local events affecting wholesale market prices, which filter to retail prices as well. Also, price regulation at retail level may partially eliminate the impact on the wholesale markets and thus result in an increasing divergence between countries where it is applied and where it is not applied, resulting in an observed higher standard deviation of retail prices.

[9] The reasons for the increased standard deviation between 2016 and 2018 are that there were some statistical outlies with unusually high or low prices reported for these years that lead to an increase in the standard deviation.

Most relevant KPI 4 **Security of supply** **Member States (MS) having reached the 10% electricity interconnection target**[10]	25 MS in 2018 26 MS by 2020	18 Member States were at or above the 10% electricity interconnection target[11] on 31 December 2018.
Most relevant KPI 5 **Residual error rates (EEPR and FP7)** *(source: DG ENER SRD.1)*	*<2%*	RER EEPR 2018: 0.30% RER FP7 2018: 3.97%



c) Key conclusions on Financial management and Internal control (executive summary of section 2.1)

In accordance with the governance arrangements of the European Commission, (the staff of) DG ENER conducts its operations in compliance with the applicable laws and regulations, working in an open and transparent manner and meeting the expected high level of professional and ethical standards.

The Commission has adopted a set of internal control principles, based on international good practice, aimed to ensure the achievement of policy and operational objectives. The financial regulation requires that the organisational structure and the internal control systems used for the implementation of the budget are set up in accordance with these

[10] The European Council of October 2014 called for all Member States to achieve interconnection of at least 10% of their installed electricity production capacity by 2020. This means that each Member State should have in place electricity cables that allow at least 10% of the electricity that is produced by their power plants to be transported across its borders to its neighbouring countries.

[11] Projects under the third Projects of Common Interest (PCI) list on strengthening electricity interconnections are progressing, but some face significant delays in particular at the permitting phase, often due to public opposition. A fourth PCI list will be adopted by the end of 2019, which will contribute to further increase the level of interconnection of the Member States.

principles. DG ENER has assessed the internal control systems during the reporting year and has concluded that the internal control principles are implemented and function as intended with the exception of principles 10 "Design of Control Activities" and 11 Controls over Technology. Please refer to AAR section 2.1.3 for further details.

In addition, DG ENER has systematically examined the available control results and indicators, including those aimed to supervise entities to which it has entrusted budget implementation tasks, as well as the observations and recommendations issued by internal auditors and the European Court of Auditors. These elements have been assessed to determine their impact on the management's assurance as regards the achievement of control objectives. Please refer to Section 2.1 for further details.

In conclusion, management has reasonable assurance that, overall, suitable controls are in place and working as intended; risks are being appropriately monitored and mitigated; and necessary improvements and reinforcements are being implemented. The Director General, in his capacity as Authorising Officer by Delegation has signed the Declaration of Assurance albeit qualified by a reservation concerning the Seventh Research Framework Programme (FP7).

d) Provision of information to the Commissioner

In the context of the regular meetings during the year between the DG and the Commissioner on management matters, also the main elements of this report and assurance declaration, including the reservation envisaged have been brought to the attention of Commissioner Arias Cañete, responsible for Energy and Climate Action.

1. KEY RESULTS AND PROGRESS TOWARDS THE ACHIEVEMENT OF GENERAL AND SPECIFIC OBJECTIVES OF THE DG

1.1 General Objectives and achievements

The Strategic Plan for DG ENER for the period from 2016-2020[12] sets out, in line with the priorities of President Juncker and the State of the Union Addresses, the general objective for DG ENER to promote a resilient Energy Union with an ambitious climate policy at its core. Furthermore, DG ENER contributed to the other priorities of President Juncker, most notably to a new boost for jobs growth and investments, a deeper and fairer internal market and Europe as a stronger global actor. The Energy Union itself is composed of five dimensions[13] that are closely interrelated and mutually reinforcing and that were specified in the Energy Union Framework Strategy.

The Strategic Plan of DG ENER identified the following threefold scope of the Energy Union. These objectives are also the general objectives for European energy policy:

- **Security of Supply**: To enhance the conditions for safe and secure energy supply in a spirit of solidarity between Member States, ensuring a high degree of protection for European citizens;

- **Sustainability**: to promote sustainable energy production, transport and consumption in line with the Europe 2020 strategy's targets and with a view to the 2030 Energy and Climate Framework;

- **Competitiveness**: To contribute to setting up an energy market providing citizens and businesses with affordable energy, competitive prices and technologically advanced energy services.

In line with the Energy Union Framework Strategy[14] and to fully reflect its five dimensions, DG ENER's Strategic Plan for 2016-2020 defined the following **six specific objectives** in order to meet all three overall objectives of energy policy:

1) Contributing to security of supply, based on solidarity and trust;
2) Further work towards a well-functioning and fully integrated internal energy market, including with interconnections;
3) Promoting the moderation of energy demand;
4) Promoting the decarbonisation of the EU energy mix and the increase of energy

[12] Strategic Plan 2016-2020, DG ENER, available at: http://ec.europa.eu/atwork/synthesis/amp/doc/ener_sp_2016-2020_en.pdf

[13] These five dimensions are: Energy security, solidarity and trust; a fully integrated European energy market; energy efficiency contributing to moderation of demand; decarbonising the economy; and research, innovation, and competitiveness.

[14] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, the Committee of the Regions and the European Investment Bank; A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy; COM(2015) 80 final; Brussels, 25 February 2015.

production from low Carbon Energy Sources, in particular renewables;
5) Tapping the job and growth potential of the energy sector and further developing energy technologies (Horizon 2020), including ITER and the safe and secure use of nuclear energy;
6) Ensure the implementation and follow-up on the overall Energy Union Framework Strategy.

Overall, **2018 was an intense and important year for the delivery for the Energy Union**. Building on the work done since 2016, notably the presentation of the Clean Energy for All Europeans Package on 30 November 2016 — the largest package of legislative proposals regarding energy policy ever presented by the Commission — the focus of DG ENER in 2018 was on accompanying and finalising the negotiations by the co-legislators of the eight pending proposals. Despite the challenge of proposing the biggest legislative review of EU energy policy and the need to uphold the ambition as well as the coherence of the proposals, tremendous progress was achieved in this respect in 2018 with the conclusion of the negotiations of all legislative files.

This culminated in December 2018 with the entry into force of Energy Efficiency Directive, Renewables Directive and the Governance Regulation and political agreements on the remaining legislative files (i.e. Electricity Risk Preparedness Regulation, Electricity Regulation and Directive, Agency for Co-operation of Energy Regulators (ACER) Regulation). The Energy Performance in Buildings Directive was the first legislative initiative of the Clean Energy Package that entered into force in June 2018.

Clean energy for all Europeans package - state of play (27 March 2019)

	European Commission Proposal	**EU Inter-institutional** Negotiations	**European Parliament** Adoption	**Council** Adoption	**Official Journal** Publication
Energy Performance in Buildings	30/11/2016	Political Agreement	17/04/2018	14/05/2018	19/06/2018 Directive (EU) 2018/844
Renewable Energy	30/11/2016	Political Agreement	13/11/2018	04/12/2008	21/12/2018 Directive (EU) 2018/2001
Energy Efficiency	30/11/2016	Political Agreement	13/11/2018	04/12/2018	21/12/2018 Directive (EU) 2018/2002
Governance of the Energy Union	30/11/2016	Political Agreement	13/11/2018	04/12/2018	21/12/2018 Regulation (EU) 2018/1999
Electricity Regulation	30/11/2016	Political Agreement	26/03/2019	Scheduled in May 2019	-
Electricity Directive	30/11/2016	Political Agreement	26/03/2019	Scheduled in May 2019	-
Risk Preparedness	30/11/2016	Political Agreement	26/03/2019	Scheduled in May 2019	-
ACER	30/11/2016	Political Agreement	26/03/2019	Scheduled in May 2019	-

None of the significant risks for the DG identified in the Annual Management Plan 2018 materialised in the course of 2018.

1.2 Specific Objective 1: Contribution to security of supply, based on solidarity and trust

As the EU remains vulnerable to external energy shocks and disruption caused by accidents, disaster or attacks, energy security is one of the five dimensions of the Energy Union. 2018 was an important year to support the implementation of the new Regulation on Security of Gas Supply, to consolidate the existing Directive on Oil stocks and to agree on a new Regulation on Risk Preparedness in the electricity sector.

After the entry into force of the **Regulation concerning measures to safeguard the security of gas supply**[15] in late 2017, DG ENER undertook in 2018 a number of actions together with the Gas Coordination Group in order to facilitate its implementation by Member States, notably by making sure that all the Member States and regional groups submit their risk analyses according to a common method. DG ENER provided in depth guidance to Member States, notably through a Commission's recommendation, on the technical, legal and financial arrangements that Member States must subscribe to ensure effective solidarity. The support of the Commission is essential to ensure that the mechanism of solidarity between Member States is effective and guarantees gas supplies to the most vulnerable users in case of a severe gas crisis.

Another important milestone was the achievement of a political agreement on the proposal for a **Regulation on Risk Preparedness in the electricity sector**[16], which aims at ensuring that Member States work together to prevent and manage electricity crises in a spirit of solidarity and transparency. The Regulation also introduces common methodologies at European level to identify crisis scenarios and to assess short term and seasonal adequacy at European or regional level, which is key to balance the electricity network and avoid shortage. DG ENER negotiations with the co-legislators on this proposal started in January 2017. A political agreement was reached in November 2018. The Commission organised exchange of information between Member States on relevant security of electricity supply issues. The exchange took place through the Electricity Coordination Group or ad-hoc fora to facilitate cross-border cooperation in view of the risk of shortage during the winter in certain regions.

Following the evaluation of last year, the Commission amended the **Directive on emergency oil stocks** to modernise the method to calculate the minimum stocks that Member States must keep accessible at all moment on the EU territory. In parallel, the Commission worked with the Oil Coordination Group to prepare first contributions to the debate initiated by the International Energy Agency (IEA) on the future of the international oil stock mechanisms. A public consultation was launched to evaluate the **Directive on the safety of offshore of oil and gas operations**.

In the area of **cybersecurity** and critical infrastructure, DG ENER prepared the ground to elaborate a Recommendation to energy operators and in a subsequent phase a Network Code on cybersecurity in electricity.

[15] Regulation (EU) 2017/1938 of the European Parliament and of the Council of 25 October 2017 concerning measures to safeguard the security of gas supply and repealing Regulation (EU) No 994/2010.
[16] Proposal for a Regulation of the European Parliament and of the Council on risk-preparedness in the electricity sector and repealing Directive 2005/89/EC; COM(2016) 862 final, Brussels, 30 November 2016.

Finally, DG ENER reinforced its **own preparedness to deal with situations of energy emergencies** by participating in a series of exercises[17] to train EU and national officials to deal with energy crisis and by establishing an internal Manual of Procedure.

In 2018, DG ENER has continued to develop the international dimension of the Energy Union insisting notably on the promotion of the clean energy transition whilst reinforcing diversification of sources, routes, and suppliers, thus enhancing energy security of the EU.

The Commission pursued its efforts to support **Ukraine** in its gas reform and unbundling to ensure an efficient **gas transit**. The dialogue with and between Russia and Ukraine was kept through the trilateral talks at both political and technical levels. The US and the EU agreed to reinforce their strategic cooperation with the view to develop the importation of **LNG from the US** to Europe to diversify its energy supply.

Work at **G20** and **G7 level** focused notably on addressing energy transitions towards cleaner, more flexible and transparent systems. Also in the context of the **International Energy Agency**, discussions continued on the promotion of the clean energy transition. The Commission further co-hosted in May the **9th Clean Energy Ministerial (CEM)** and the **3rd Mission Innovation Initiative (MI)**.

The first meeting of the **EU-US Energy Council** in July 2018 allowed for a substantial exchange of views on the opportunities for transatlantic energy cooperation. In Asia, the **EU's energy cooperation with China**, **India and Japan** registered further progress during 2018. In Latin America, the first **Energy Dialogue with Mexico** was held with very positive results. In November, DG ENER in cooperation with DG DEVCO successfully launched the **EU-Africa High Level Platform for Sustainable Energy Investments in Africa**. The Platform is a first concrete action implementing the new EU Africa Alliance for Sustainable Investments and Jobs announced by President Juncker.

In the **Neighbourhood South**, regional energy dialogue gained momentum within the Union for the Mediterranean framework. A Ministerial meeting in November allowed making further progress on the **EU strategic energy partnership with Algeria**, whilst the **EU-Egypt relations** were significantly reinforced via a new Memorandum of Understanding on Energy.

In 2018, the situation **in Ukraine** continued to be a priority. In the framework of the **Eastern Partnership**, energy cooperation continued. In February, the Commission adopted its **Communication on a credible enlargement perspective for and enhanced EU engagement with the Western Balkans**. In the **Caspian and Central Asia region**, the Commission continued to stimulate, inter alia, the development of the Southern Gas Corridor (SGC). With regard to the **Energy Community**, further progress were made in November on the negotiations on Treaty amendments as well as on the adoption of **2030 energy targets for the Contracting Parties of the Energy Community.**

Finally, in the context of the implementation of the **Decision 2017/684 on intergovernmental agreements and non-binding instruments**, DG ENER assessed several draft agreements with respect to their compatibility with Union law and was involved as an observer to multilateral negotiations, notably concerning the EastMed pipeline.

[17] EU-NATO Parallel and coordinated exercise, International Energy Agency exercise and various exercises at national or regional level.

1.3 Specific Objective 2: Further work towards a well-functioning and fully integrated internal energy market, including with interconnectors

2018 was a major year for advancing the important work towards a well-functioning and fully integrated internal energy market benefiting EU citizens and industry. In implementing the agenda of the Juncker Commission, DG ENER contributed to achieving a political agreement on the legislative proposals presented as part of the Clean Energy for All Europeans Package, namely the draft **Electricity Regulation**[18], the draft **Agency for Co-operation of Energy Regulators (ACER) Regulation**[19] and the draft **Electricity Directive**[20]. The close cooperation between DG ENER and the co-legislators allowed overcoming the challenges presented by the simultaneous negotiation of the files. The political agreement on the energy **market design initiative** constituted the major and most significant achievement in 2018 under Specific Objective 2. This is important in order to deliver a secure, sustainable and cost-effective energy system across the entire EU and to ensure full and effective integration of the renewable energy needed to meet the EU's targets and to allow for the secure supply of electricity and gas.

In 2018, DG ENER collected stakeholders' recommendations for potential harmonisation on demand-side flexibility and interoperability of consumer data. This progress paves the way towards preparing the respective network codes and implementing acts. On privacy and data protection, the Commission supported the publication of the Data Protection Impact Assessment (DPIA) Template for Smart Grid and Smart Metering Systems. DG ENER also adopted eleven certification opinions for electricity and gas transmission system operators (TSO), seven regulatory methodologies[21] (as mandated by various network codes and guidelines), an exemption decision (for the Gas Interconnector Greece-Bulgaria, IGB) and the implementation of ownership unbundling for the Latvian gas TSO "Conexus Baltic Grid".

DG ENER paved the way to the final adoption of the third list of designated Projects of Common Interest in March 2018: this will support future projects. Projects already enjoying Commission support received €48 million in disbursements in 2018; another call for proposals will follow.

The **Innovation and Networks Executive Agency (INEA) continued to support the work of DG ENER** in 2018 and contributed to the development of the multiannual work programme for granting financial aid in the field of trans-European energy infrastructure under the **Connecting Europe Facility (CEF)** for the period 2014-2020. In the

[18] Proposal for a Regulation of the European Parliament and of the Council on the internal market for electricity (recast); COM(2016) 861 final; Brussels, 30 November 2016.
[19] Proposal for a Regulation of the European Parliament and of the Council establishing a European Union Agency for the Cooperation of Energy Regulators (recast); COM(2016) 863 final; Brussels, 30 November 2016.
[20] Proposal for a Directive of the European Parliament and of the Council on common rules for the internal market in electricity (recast); COM(2016) 864 final; Brussels, 30 November 2016.
[21] Such as "Amended Intraday Cross Zonal Gate Opening and Gate Closure Times" – Decision taken 24/04/2018.

framework of CEF, and in line with the Programme Statement presented in the Commission's Draft General Budget of the European Union for the Financial Year 2018[22], in February 2018 a selection decision was adopted on proposals received under the call of 2017. A total of €873 million in CEF grants was allocated to 17 Projects of Common Interest (PCIs) in 2017. In the first semester 2018, a first call (2018-1 Energy) was published with a budget of EUR 200 million targeting PCIs in the areas of electricity, smart grids, gas and, for the first time, cross-border carbon dioxide networks. In June, a second call (2018-2 Energy) was published. The Commission received 22 proposals requesting a total of EUR 2.3 billion and awarded €800 million for studies and works for a total of 14 projects.

Throughout 2018 important and substantial progress was made regarding the Energy Union **enabling framework**:

- **The Clean Energy for EU Islands Initiative** is now fully operational. In close cooperation with the relevant Member States' authorities, DG ENER is providing support to clean energy transition in several islands. Secretariat became operational in June 2018 and support islands that are planning, designing or undergoing clean energy transition. In November 2018, the second Forum for Clean Energy for European Islands took place in Lanzarote. Pilot islands have been pre-selected and a call for expression of interest for a further 23 islands was launched. These islands will receive support in preparing Clean Energy Transition Agendas. The Clean Energy for European Islands Initiative acts as a platform of exchange of best practices for islands' stakeholders and provides capacity-building and advisory services to them.

DG Dominique Ristori at the Clean Energy for EU Islands Forum in Lanzarote

- **The Coal Regions in Transition Platform** is designed to assist Member States and regions in tackling the challenges of maintaining jobs and growth in communities affected by the planned and ongoing closure of coal mines and the commitment of some Member States to phase our coal. In 2018, three two-day meetings of the two Platform Working Groups took place in Brussels and an Annual Political Dialogue was held prior to COP24 in Katowice, Poland. Bloomberg Philanthropies and the World Bank will support the Platform in private investments and technical support. Dialogue has started with the Committee of Regions, the European Economic and Social Committee and the Covenant of Mayors on the inclusion of those entities in the work of the Coal Regions in Transition Platform. DG ENER played a leading role alongside DG REGIO in the so-called Country Teams that assist 13 pilot coal regions across the EU in preparing transition strategies, in identifying priority projects and in developing financing strategies for those projects.

1st Annual Political Dialogue on Coal Regions in Transition in Katowice on 30 November 2018

[22] COM(2017) 400

- **The Covenant of Mayors** passed the mark of 1000 in terms of cities committed to 2030 energy and climate targets and grew to 9487 cities. On 22 February 2018, the Covenant of Mayors Europe 10th year anniversary Ceremony in conjunction to the European Industry Days was held in the European Parliament. In 2018, the first Covenant of Mayors Investment Forum gathered over 400 representatives from local authorities, industry and financial institutions to share experiences and best practices in developing projects on financing climate adaptation, clean urban mobility concepts, energy efficiency in public assets and home renovation. DG ENER also supported the preparation of contracts for Regional Covenants in our Eastern and Southern neighbourhood, Canada, Latin America, Sub-Saharan Africa and Asia (South Asia, Japan) in close cooperation with DGs NEAR, DEVCO, JRC, FPI and SG and a partnership with Google to open their proprietary data for public benefit and to automate generation of Covenant emission inventories.

Covenant of Mayors - Europe 10th year anniversary Ceremony

- **The EU Energy Poverty Observatory** was launched by DG ENER in 2018 to assist Member States in identifying, measuring and addressing energy poverty. The Energy Observatory (EPOV) published the first pan-EU report on energy poverty and drafted reports regarding the energy poverty situation and measures to prevent it in each Member State.

1.4 Specific Objective 3: Promoting the moderation of energy demand

Building on the political agreement reached by the co-legislators on the first legislative proposal of the Clean Energy for All Europeans package, negotiations on the revised **Energy Performance of Buildings Directive (EPBD)**[23] were concluded in June with publication on 19 June 2018 and entry into force on 9 July 2018.

The amended EPBD builds on two complementary objectives, which are to accelerate the renovation of existing buildings with a clear 2050 goal and, to support the modernisation of all buildings thanks to smart technologies and a clearer link to clean mobility. It includes comprehensive long-term renovation strategies and roadmaps to be established by Member States to speed up building renovation and decarbonisation of national building stocks by mid-century, and with a solid financing component, provisions on deploying recharging infrastructure for e-mobility in buildings, as well as mandatory building automation and control for large non-residential buildings and an optional indicator for measuring the smart readiness of buildings.

As regards energy efficiency, negotiations on the legislative proposal for an amended **Energy Efficiency Directive (EED)**[24] were also concluded in June 2018. The revised directive was published on 21 December 2018 and entered into force on 24 December 2018. It includes a headline target of at least 32.5% for energy efficiency to be achieved collectively by the EU in 2030, with a possible revision upwards by 2023. It also contains an annual energy saving obligation of 0.8% of final energy consumption to be achieved in the period of 2021-2030 (under Article 7). Other important changes were made in Articles 9-11 on clearer and strengthened rules for metering and billing of thermal energy – especially in multi-apartment building with collective heating systems. In addition, the primary energy factor for electricity generation was updated. The transposition deadline is set for the period of 18 months, except for metering and billing provisions (22 months).

Work on the implementation and enforcement of the existing EPBD and the EED continued in 2018, with dialogues with the Member States on the conformity of their transposition and/or implementation. The majority of the EPBD non-conformity infringements were closed as the Member States brought their transposition/implementation into line.

In the context of the work on mobilising efforts for achieving the energy efficiency targets for 2020, the Commission services in the autumn 2018 set up a dedicated Member States' Task Force. The objective is to join forces to reach the EU 2020 targets and to reverse the recent increasing trend in energy consumption in the EU. In this context, the Commission services produced a report on the work of the task force which will feed into its annual Energy Union progress report on energy efficiency.

[23] Directive (EU) 2018/844 of the European Parliament and of the Council amending Directive 2010/31/EU on the energy performance of buildings.
[24] Directive (EU) 2018/2002 of the European Parliament and of the Council amending Directive 2012/27/EU on energy efficiency

2018 also brought important progress in the area of products, where work advanced well on revising **eco-design** and **energy labelling requirements** for several product groups with positive votes in the Regulatory Committee on refrigerators, displays and lighting products in December. The product registration database became operational on 14 December 2018, thus allowing suppliers to add the necessary information in time for the legal deadline of 1 January 2019.

Brexit preparedness

As part of the Commission's overall preparations for Brexit, in 2018 DG ENER has prepared a legislative proposal for Brexit preparedness concerning a technical amendment to the Energy Efficiency Directive and Governance Regulation, adapting the absolute energy consumption values for the Union's 2030 Energy Efficiency target to a Union of 27 Member States.

Significant progress was made concerning the financing of energy efficiency. The amounts for project development assistance (PDA) were increased, in particular under the European Local Energy Assistance (ELENA) facility, to help project promotors prepare bankable projects.

In its work on energy efficiency but also regarding the general objective of competitiveness, DG ENER is supported by the **Executive Agency for SMEs (EASME)**, which in 2018 implemented one call deadline for energy efficiency as part of Horizon 2020 – Societal Challenge 3. In 2018, three Concerted Actions were ongoing: on the EPBD, on the Renewable Energy Sources Directive and on the Energy Efficiency Directive. In addition, EASME managed four tenders under Horizon 2020 contracts, among which a tender on sustainable energy financing contributing to the Smart Finance for Smart Buildings initiative. EASME provided regular policy inputs to DG ENER and other DGs on the promising results from the projects. Moreover, several Horizon 2020 projects managed by the Agency are continuously contributing to the development of the three pillars of the Smart Finance for Smart Buildings Initiative.

1.5 Specific Objective 4: Promoting the decarbonisation of the EU energy mix and the increase of energy production from low Carbon Energy Sources, in particular renewables

In the area of decarbonisation and renewable energy, work in 2018 focused on the negotiations on the recast of the Directive on the promotion of the use of energy from renewable sources (**Renewable Energy Directive**[25]). Trilogues started in February 2018 under the Bulgarian Presidency and a provisional agreement was reached in the fifth trilogue, on 13 June 2018. The co-legislators signed the final text on 11 December and Renewable Energy Directive was published in the Official Journal on 21 December with an entry into force three days later and transposition by 30 June 2021. Complementary, work also focused on the preparation of a proposal revising the Connecting Europe Facility Regulation, which includes *inter alia* a new element on cross-border projects in the field of renewable energy.

[25] Directive (EU) 2018/2001 of the European Parliament and of the Council on the promotion of the use of energy from renewable sources (recast).

In parallel to the formal adoption of the Clean Energy package, the Commission has started work to implement the first elements emanating from the new legislation concerning renewables. This includes inter alia preparatory work for a Delegated Act setting out the criteria for both identifying high-ILUC risk feedstock and for certifying low-ILUC risk biofuels, bioliquids and biomass fuels and an Implementing Act for the establishment and functioning of the renewables financing mechanism. Another priority during the year was the implementation of the current Directive on the promotion of the use of energy from renewable sources (RED). Work was devoted to assess the transposition of the ILUC Directive (Directive EU/2015/2013), after the transposition deadline of 10 September 2017.

In addition, DG ENER in 2018 continued to work towards enhanced **regional cooperation** between Member States on support schemes, including the use of the cooperation mechanism as envisaged in the Renewable Energy Directive. As the time to reach the 2020-targets approaches, DG ENER initiated a process with the aim to facilitate Member States' agreements on statistical transfers to reach 2020-targets and to exchange views on how the Statistical Transfer Platform for post-2020 (envisaged in Art. 8 of the revised Renewable Energy Directive) could best be implemented.

EU **international cooperation** on renewable energy continued to grow in 2018. Work at regional scale included discussions with the Energy Community on 2030 targets and the renewable energy potential for the CESEC (Central and South Eastern Europe Connectivity) region. Finally, the European Commission continued to ensure a coordinated EU position for both the IRENA Council and General Assembly. The EU Energy Days in Abu Dhabi, in parallel to the IRENA General Assembly, and in Katowice at COP24 and the Commission participation in the Clean Energy Ministerial were successful demonstrations of the EU leadership.

1.6 Specific Objective 5: Tapping the job and growth potential of the energy sector and further developing energy technologies (Horizon 2020), including ITER and the safe and secure use of nuclear energy

1.6.1 Competitiveness

More and better targeted investments along the five dimensions of the Energy Union will translate into growth, jobs and help European industries to take advantage of business opportunities in other regions of the world. In 2018, DG ENER continued to support the Commission's efforts to make full use of available EU financial funds and instruments to further promote the clean energy transition.

In particular, DG ENER continued to manage the process of developing the **'Smart financing for smart buildings initiative**', the sustainable energy financing model that will help blending **EFSI with European Structural and Investments Funds** and mobilising thus significant additional investment. During the course of 2018, DG ENER dealt with the daily operational management and increase in investments of the **EEEF** while supporting the organisation of its conversion to a full-fledged Alternative

Investment Fund that would allow it to increase its capital by issuing debt. Ongoing efforts to liaise and coordinate with EIB and the EBRD continued throughout the year, to facilitate their increased focus and spending on sustainable energy projects.

In 2018, DG ENER undertook all the preparations and work for the **2019 energy prices and costs report** including undertaking various analysis, studies, consultations with Member States and stakeholders, in coordination with other services.

1.6.2 Research and Innovation

Throughout the year, the work on the **Strategic Energy Technologies Plan**[26] **(SET Plan)** continued with the delivery of Implementation Plans for each of the 10 SET Plan Actions by the respective Temporary working groups (TWGs), describing concrete Research and Innovation activities to be performed in order to reach the targets set.

In 2018, the EUR 320 million supervised by DG ENER under **Horizon 2020** Work Programme 2018 were mainly disbursed under open calls for proposals covering "Smart citizen centred energy system", "Smart Cities and Communities", "Energy efficiency", "Smart and clean energy for consumers" and "Fast track to innovation for energy". In total, eleven new projects were selected in the area of Energy Islands and decarbonised geographical islands as well as one ERA-NET project aiming to establish a Pan-European forum for Smart Grid research and innovation. In addition, two Lighthouse projects were selected under the Smart Cities call. The Energy Challenge has also contributed to joint calls boosting the energy sector transformation through digitisation.

InnovFin, the financial instrument designed by the Commission together with the European Investment Bank expanded its scope to cover two new sectors (Energy storage and Smart grids) which have become eligible for loans under InnovFin Energy Demonstration Projects. These two sectors contributed about 50% to the project pipeline growth. To be considered though that about 70% of all projects eventually drop-out of the EDP pipeline due to challenging permitting or, funding conditions outside the scope of InnovFin. The 6 flagship Energy Demo Projects (EDP) signed by end November 2018 correspond to a volume of EUR 184,5 million.

Implementation of remaining projects under the **European Energy Programme for Recovery (EEPR)** continued, especially regarding offshore wind projects being completed or entering the last phases of implementation. In addition, DG ENER continued the implementation of the still ongoing FP7 legacy projects.

With regard to the **international cooperation** on clean energy technology development, a series of events and initiatives have been put forward in 2018 in the context of **Clean Energy Ministerial** (CEM), Mission Innovation (MI), and through the various Technology Collaboration Programmes (TCPs) under the **International Energy Agency** (IEA). DG ENER also organised important annual conferences in the field, such as EU Sustainable Energy Week, the SET Plan Conference, and also participated in both CEM and MI Ministerial meetings. For Mission Innovation specifically the EU continued efforts in steering work and in co-leading two of the Innovation challenges (Conversion of sun light to fuels; Affordable heating and cooling of buildings - the latter led by DG ENER).

DG ENER has also pursued the emphasis on **Smart Cities**, dedicating greater attention to the energy system approach, including energy storage, e-mobility, decarbonisation of buildings and digitalisation. The European Innovation Partnership on Smart Cities and Communities, collaboratively managed by DG ENER, DG MOVE and DG CONNECT, launched a whole new matchmaking platform bringing together cities, industry, citizens and the financing sector to improve urban life through market rollout of bankable, replicable, sustainable, integrated innovative projects, embracing the intersection of Energy, ICT and Transport.

[26] Communication from the Commission towards an Integrated Strategic Energy Technology (SET) Plan: Accelerating the European Energy System Transformation; C(2015) 6317 final; Brussels 15 September 2015.

1.6.3 Nuclear Energy (Promoting the safe and secure use of nuclear energy and ensuring the peaceful use of civil nuclear materials for their intended purposes)

Several key actions were undertaken during the course of 2018 to enhance **nuclear safety** inside and outside the EU. DG ENER worked, in close collaboration with the Member States' regulatory authorities within the European Nuclear Regulatory Safety Group (ENSREG), on the preparation and implementation of the first Topical Peer Review (TPR) on "Ageing management of nuclear power plants and research reactors", as provided by the amended Nuclear Safety Directive (NSD). Nuclear Safety regulators are in the process of developing national action plans to address the recommendations resulting from the exercise.

Work has continued in 2018 to ensure timely transposition and effective implementation of the **EU legal framework on nuclear safety**, responsible and safe management of spent fuel and radioactive waste, and the radiation protection of workers, patients and the general public.

In January 2018, the Commission adopted its **second report** on the **implementation of Council Directive 2006/117/Euratom on the supervision and control of shipments of radioactive waste and spent fuel for the period 2012-2014**.

The **Nuclear Decommissioning Assistance Programmes** in Bulgaria, Lithuania, and Slovakia continued to progress substantially in reducing the nuclear safety related risks associated with the concerned reactors; in this respect, the full removal of spent fuel from the reactor cores in Ignalina (Lithuania) was especially remarkable. The Commission adopted proposals for the new multiannual financial framework (MFF) 2021 – 2027 prepared by DG ENER for the continued support to decommissioning activities in LT, BG, SK and the JRC facilities (€ 1.02 billion). This is in line with the Programme Statement presented in the Commission's Draft General Budget of the European Union for the Financial Year 2018[27].

The Commission initiated discussions on new technology, like the Small Modular Reactors (SMRs), in the framework of the 2018 Bratislava conference of the European Nuclear Energy Forum (ENEF). In particular, the development of SMRs – for which DG ENER in co-operation with JRC and DG RTD is supporting research activities related to aspects such as safety and licensing – may represent a key development for nuclear energy exploitation.

In the field of non-power applications of nuclear and radiation technology, in March 2018 DG ENER organised a high-level conference on medical, industrial and research applications of nuclear and radiation technology in view of establishing a **Strategic Agenda for Medical, Industrial and Research Applications of Nuclear and Radiation Technology (SAMIRA)**. The SAMIRA initiative seeks to support the nuclear and radiation technology while maintaining high standards of radiation protection, to advance medical care, to continue to protect citizens and to reduce inequalities in society, to support innovative industrial applications, and to foster EU research.

[27] COM(2017) 400

With regard to the **external dimension of nuclear energy policy**, DG ENER in close cooperation with the JRC and DG DEVCO continued its efforts in support of the implementation of risk and safety assessments of nuclear power plants in EU Neighbouring Countries. Stress Tests on the Ostrovets (Belarus) Nuclear Power Plant (NPP) were carried out, fulfilling the requests of the European Council post Fukushima to engage with EU neighbouring countries. In support of the implementation of the **Joint Comprehensive Plan of Action (JCPoA)** with Iran, cooperation in the field of nuclear safety continued with the successful organisation of the third High-Level Seminar with key Iranian decision makers and experts. The EU and Iran reaffirmed their commitment to nuclear cooperation under Annex III of the Agreement and agreed on a number of specific activities to be conducted in 2019, including a follow-up high-level seminar to be held in late 2019 in Iran.

Concerning the **implementation of Euratom Safeguards**, no case of nuclear material diversion appears to have occurred in 2018. 93% of the inspected nuclear facilities satisfied the Commission's safeguards criteria, which represents an increase in positive safeguards conclusions compared with 2017 but it is still below the 95% target. The decline in 2017 and 2018 was partly based on the performance of nuclear operators and on a strict interpretation of safeguards, meaning that also formal failures would lead to negative conclusions.

1.6.4 Developing Nuclear Fusion Technologies (ITER)

Since its start in 2007, the **ITER project**, a technologically complex, first-of-a-kind, large-scale international project, has faced significant challenges as regard its costs and delays. However, the progress made in 2018 confirmed the robustness of the actions undertaken to address these issues.

In April 2018, the Council of the EU adopted Conclusions mandating the Commission to approve the new baseline at an **ITER Council meeting at Ministerial level**, responding to the Commission Communication of June 2017 on the newly defined 2016 baseline for the ITER project. On this basis, the Commission proposed to allocate EUR 6.07 billion to finance the European participation in ITER and adopted a specific legislative proposal for the implementation of this funding in the next MFF. Funds will be used to complete the construction and finalise the assembly of the fusion machine in order to begin operations after First Plasma, foreseen for December 2025.

On the ITER site, construction is steadily progressing - the physical construction activities for First Plasma surpassed 60% completion by the end of 2018. Fusion for Energy (F4E), the EU Domestic Agency that implements the EU contribution to the project, achieved important progress in the construction of ITER buildings, completing the concrete crown (base) of the tokamak building on schedule in August 2018. Overall, substantial progress is being made for every major ITER component, system and structure. This is in line with the Programme Statement presented in the Commission's Draft General Budget of the European Union for the Financial Year 2018[28]. The progress that has been made in the project was catalogued and evaluated in the mid-term evaluation prepared by the Commission in 2018.

A new **Administrative Agreement between the Commission and F4E** was signed at the end of 2018. It sets out the conditions of the transfer of funds from the Commission to the Joint Undertaking, improving the practices and instruments for the steering and supervision of F4E, and complements the supervision strategy for Euratom's participation in the governance of the ITER Organisation.

[28] COM(2017) 400

1.7 Specific Objective 6: Implementation and follow-up on the overall Energy Union Strategy

In 2018, DG ENER was, together with DG CLIMA, in the lead for the final stage of the negotiations with the Council and the Parliament on the proposed **Regulation on the Governance of the Energy Union and Climate Action**[29]. In particular, the key challenge for DG ENER was to support the negotiations and helped to ensure the swift and timely conclusion of the trilogue negotiations in the first half of 2018, as well as to ensure the timely official entry into force of the Regulation by end of December 2018. Trilogues began in February 2018 under the Bulgarian Presidency and following the provisional agreement reached in June 2018, the co-legislators signed the final text on 11 December. The Governance Regulation was published in the Official Journal on 21 December with an entry into force three days later. This Regulation constitutes the first horizontal piece of legislation at EU level covering all energy sectors and including climate policy. As the new legislation fixes a deadline for the Member States to notify their draft **National Energy and Climate Plans (NECPs)** by 31 December 2018, it was crucial to ensure the entry into force by the end of the year. For this reason, DG ENER put several measures in place to accelerate internal procedures and reduce the time between adoption and entry into force. Via those Plans, a reinforced political process and a more prominent involvement of European citizens and stakeholders, the Regulation introduces enhanced and unprecedented forms of policy cooperation in Europe in the areas of energy and climate, notably in view of attaining the EU level 2030 targets as well as the objectives of the Energy Union. In 2018, DG ENER also ensured that the **proposed Regulation on the Common Provisions on the next Multiannual Financial Framework (MFF)** included the need for national and regional operational programmes to take into account the content of the draft National Energy and Climate Plan as well as the outcome of the process resulting in Union recommendations regarding these plans. In addition, an enabling condition linked to the submission of the final National Energy and Climate Plan was included in the Commission proposal for the Common Provisions Regulation under the next MFF.

In parallel to the policy negotiations, the Commission supervised the necessary **technical assistance to Member States in view of the submission of the draft NECPs**. DG ENER notably arranged several bilateral meetings and visits to Member States, organised regular meetings of the **Technical Working Group** (TWG) with the EU Member States to support the effective preparation of ambitious and consistent integrated plans. These meetings have proved decisive for the timely preparation by the Member States of the draft NECPs making it possible for a timely notification of a large majority of Member States' Plans by January 2019. In parallel, DG ENER ensured **technical assistance** to the Member States who so wished in the preparation of the draft Plans. Furthermore, in view of the submission of the first-ever **draft NECPs**, DG ENER designed and set up the **internal process for their assessment**. As a result, six Working Groups were created across the DG, involving cross-sectorial representation, and participation from other DGs.

[29] Regulation (EU) 2018/1999 of the European Parliament and of the Council on the Governance of the Energy Union, amending Directive 94/22/EC, Directive 98/70/EC, Directive 2009/31/EC, Regulation (EC) No 663/2009, Regulation (EC) No 715/2009, Directive 2009/73/EC, Council Directive 2009/119/EC, Directive 2010/31/EU, Directive 2012/27/EU, Directive 2013/30/EU and Council Directive (EU) 2015/652 an repealing Regulation (EU) No 525/2013; COM(2016) 759 final; Brussels, 30 November 2016.

Late in 2018, preliminary work started on the preparation of implementing and delegated acts foreseen by the new Governance Regulation, inter alia an Implementing Act for the establishment and functioning of the renewables financing mechanism and an Implementing Act on the reporting of progress on the National Plans. In this regard, DG ENER launched the preparation of the upcoming e-reporting platform under the Governance Regulation together with DG CLIMA and SG and set-up a Task Force for the elaboration of the platform and of the progress reporting templates on energy topics.

Following the invitation by the European Council in March 2018, DG ENER, working in close collaboration with DG CLIMA, undertook the analysis and modelling to prepare, process and present the long term energy and climate strategy for reducing greenhouse gases in line with the Paris Agreement: **"A Clean Planet for All[30]"**. The strategy shows how Europe can lead the way to climate neutrality by investing into available technological solutions, empowering citizens, and aligning action in key areas such as industrial policy, finance, or research – while ensuring social fairness for a just transition.

In 2018, DG ENER contributed to the Commission's initiative on "**The Greater International Role of the Euro[31]",** providing extensive analysis, background material, and prepared the **Commission Recommendation[32] on the use of the euro in energy transactions,** and the related staff working document[33], which have been adopted by the Commission on 5 December 2018.

DG ENER continued in 2018 to contribute to the **European Semester process** and provided input to the country reports. Particular emphasis was placed on the investment angle and on the link with the Energy Union governance process and the national integrated national energy and climate plans. Focus was also on the Europe 2020 national targets regarding development of renewable energy and energy efficiency.

For a complete overview of the DG's performance in relation to the objectives and indicators set out in the Strategic Plan 2016-2020 and the Annual Management Plan 2018 please see the performance tables in Annex 12.

Brexit preparedness

As part of the Commission's overall preparations for Brexit, DG ENER published notices to stakeholders on a number of energy specific impacts of Brexit: on Guarantees of Origin on 7 March 2018; on Euratom on 23 March 2018 (updated in September) and on the internal energy market on 27 April 2018.

[30] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, the Committee of the Regions and the European Investment Bank, A Clean Planet for all. A European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy; COM(2018) 773 final, 28 November 2018.

[31] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, the Committee of the Regions and the European Investment Bank, Towards a stronger international role of the euro; COM(2018) 796 final, 5 December 2018.

[32] Commission Recommendation of 5 December 2018 on the international role of the euro in the field of energy; C(2018) 8111 final.

[33] Commission Staff Working Document, Promoting the international role of the euro in the field of energy; SWD(2018) 483 final, 5 December 2018.

2. ORGANISATIONAL MANAGEMENT AND INTERNAL CONTROL

This section explains *how* the Directorate General (DG) delivered the achievements described in the previous section. It is divided into two subsections.

The first subsection reports the control results and all other relevant information that support management's assurance on the achievement of the financial management and internal control objectives[34]. It includes any additional information necessary to establish that the available evidence is reliable, complete and comprehensive; appropriately covering all activities, programmes and management modes relevant to the DG.

The second subsection deals with the other components of organisational management: human resources, better regulation principles, information management and external communication.

2.1 Financial management and internal control

Assurance is an objective examination of evidence for the purpose of providing an assessment of the effectiveness of risk management, control and governance processes.

This examination is carried out by management, who monitors the functioning of the internal control systems on a continuous basis, and by internal and external auditors. Its results are explicitly documented and reported to the Director-General. The reports produced are:

- the reports by the Authorising Officers by Sub-Delegation (AOSDs);
- the reports from Authorising Officers in other Directorates-General managing budget appropriations in cross-delegation;
- the reports on control results from entrusted entities in indirect management as well as the result of the Commission supervisory controls on the activities of these bodies;
- the contribution of the Internal Control Coordinator, including the results of internal control monitoring at the Directorate-General level;
- the reports on recorded exceptions, non-compliance events and any cases of 'confirmation of instructions' (Art 92.3 Financial Regulation);
- the reports of the ex-post audit;
- the limited conclusion of the internal auditor on the state of control and the observations and recommendations reported by the Internal Audit Service (IAS);
- the observations and the recommendations reported by the European Court of Auditors (ECA).

These reports result from a systematic analysis of the evidence available. This approach provides sufficient guarantees as to the completeness and reliability of the information reported and results in a complete coverage of the budget delegated to the Director-General of DG ENER.

This section reports the control results and other relevant elements that support management's assurance. It is structured into (2.1.1) Control results, (2.1.2) Audit observations and recommendations, (2.1.3 Assessment of the effectiveness of the

[34] Art 36.2 FR: a) effectiveness, efficiency and economy of operations; b) reliability of reporting; c) safeguarding of assets and information; d) prevention, detection, correction and follow-up of fraud and irregularities; and e) adequate management of risks relating to the legality and regularity of underlying transactions

internal control system, and resulting in (2.1.4) Conclusions on the impact as regards assurance.

2.1.1 Control results

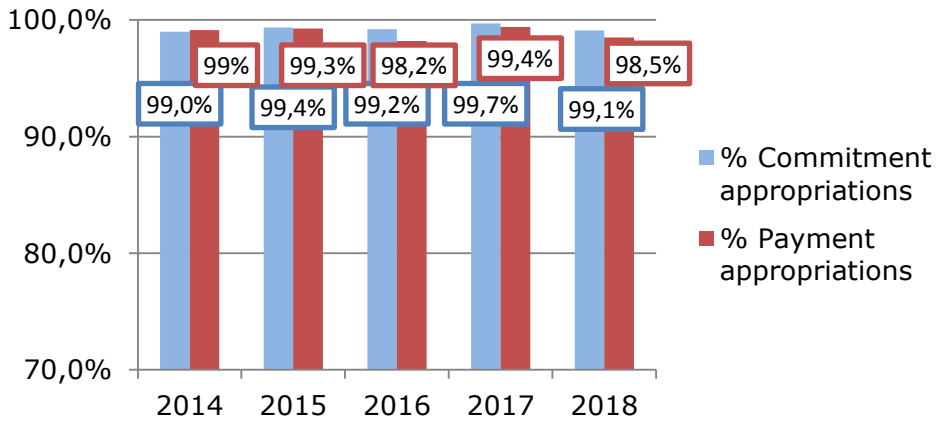
This section reports and assesses the elements identified by management that support the assurance on the achievement of the internal control objectives[35]. The DG's assurance building and materiality criteria are outlined in Annex 4 of the Annual Activity Report (AAR). Annex 5 outlines the main risks together with the control processes aimed to mitigate them and the indicators used to measure the performance of the relevant control systems.

In 2018, DG ENER did not implement grants for which a flat rate of more than 7% would be applicable. However, in its relation with the Joint Research Centre, it is bound by the level of back charge decided by the Commission. The marginal overheads rate in this case is 18%.

2.1.1.1. Overview of the 2018 budget execution

The total payments of DG ENER in 2018 amount to EUR 1.232 billion, the vast majority being operational as the administrative part accounts for less than 1%.

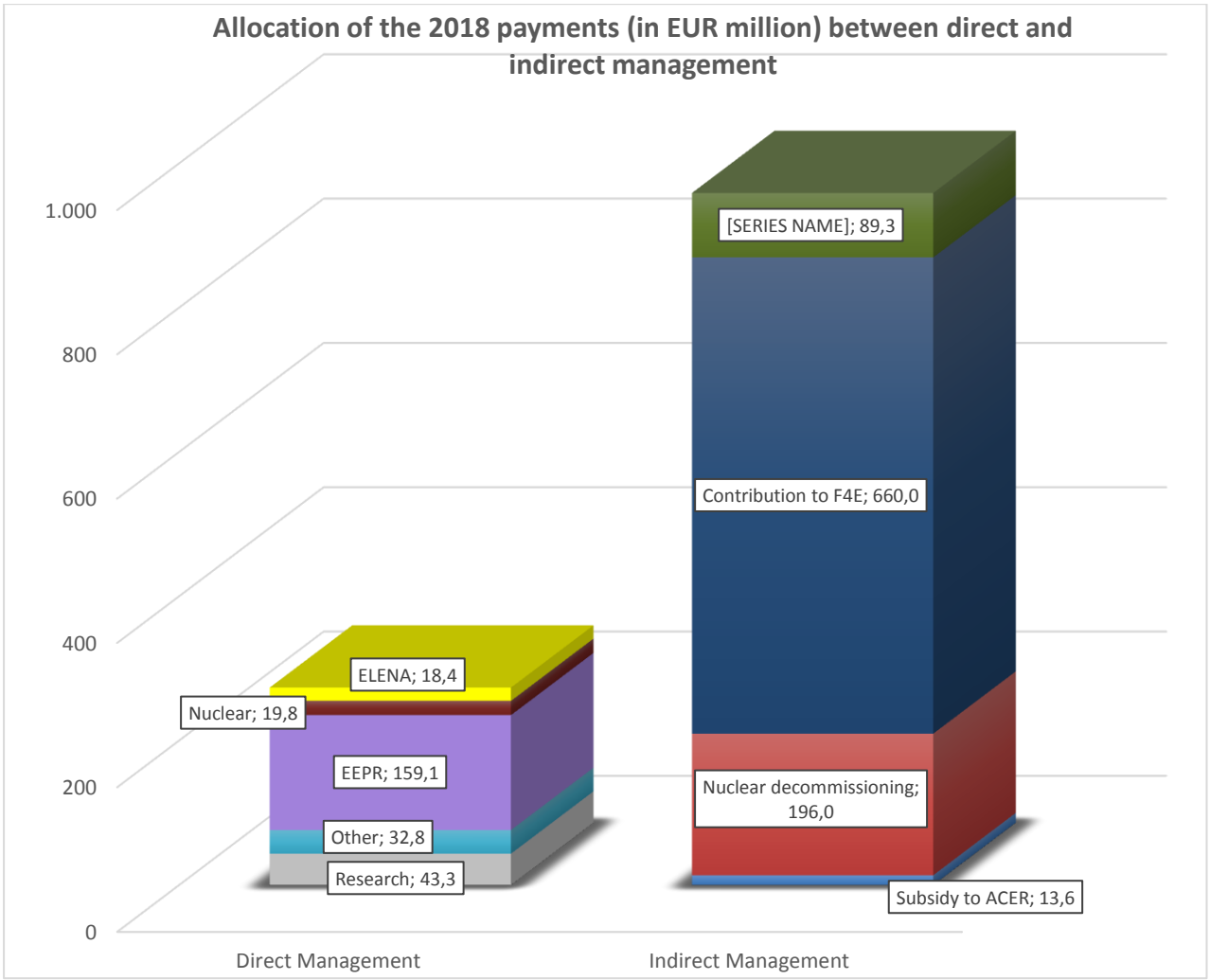
The following chart shows the execution of DG ENER's appropriations[36] over time. In 2018 DG ENER absorbed 99.11% of the commitment appropriations and 98.50% of the payment appropriations.



The two charts below provide an overview of DG ENER implementation of its programmes and activities under direct management (22.18%) and indirect management (77.82%).

[35] 1) Effectiveness, efficiency and economy of operations;2) *reliability of reporting; 3) safeguarding of assets and information*; 4) prevention, detection, correction and follow-up of fraud and irregularities; and 5) adequate management of the risks relating to the legality and regularity of the underlying transactions, taking into account the multiannual character of programmes as well as the nature of the payments (FR Art 36.2). *The 2nd and/or 3rd Internal Control Objective(s) (ICO) only when applicable, given the DG's activities.*

[36] This chart is based on C1 and E0 credits only (commitment appropriations voted in the current budget, budget modifications and other current year commitment appropriations, modifications due to amending budgets and transfers), while tables 1 and 2 of Annex 3 include all authorised appropriations.


Allocation of the 2018 payments (in EUR million) between direct and indirect management
1.000
800
600
400
200
0
[SERIES NAME]; 89,3
Contribution to F4E; 660,0
Nuclear decommissioning; 196,0
Subsidy to ACER; 13,6
ELENA; 18,4
Nuclear; 19,8
EEPR; 159,1
Other; 32,8
Research; 43,3
Direct Management
Indirect Management

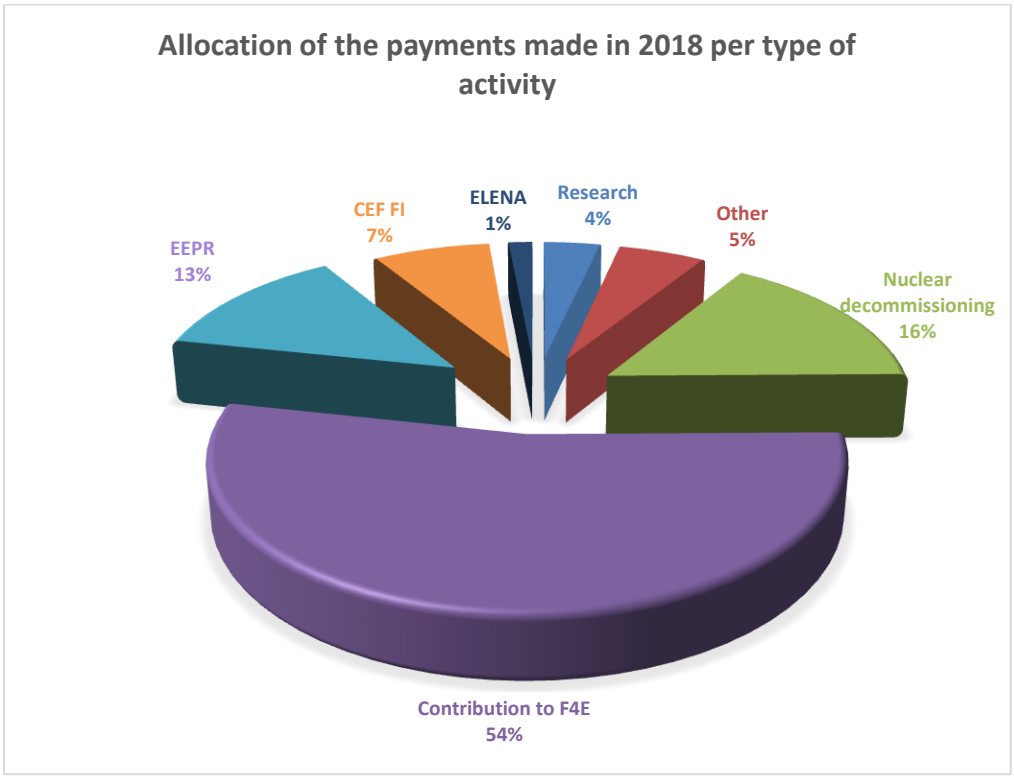

Allocation of the payments made in 2018 per type of activity
EEPR 13%
CEF FI 7%
ELENA 1%
Research 4%
Other 5%
Nuclear decommissioning 16%
Contribution to F4E 54%

Table 2.1: Overview table: types of activities and main indicators (figures in EUR)

Risk-types / Activities	Grants / Procurements	Cross-sub-delegations to other DGs	Subsidies / funds to EE (EU Agency, EA, JU) Delegation Agreements with EE	Available ICO indicator(s)	Independent info from auditors (IAS, ECA) on assurance or on new/overdue critical recommendations available?	Reservation	AAR Section
EEPR grants	159.100.247			RER: 0.30%	N	N	2.1.1.2.1 A
FP7 grants	39.287.434			RER: 3.97%	N	Y	2.1.1.2.1 A
H2020 grants	3.841.386	202.016		RER: 3.30%	N	N	2.1.1.2.1 A
Contribution to F4E JU			659.910.844	Audit / supervision activities	N	N	2.1.1.2.1 B
Nuclear decommissioning (CPMA / EBRD / SIEA)			195.984.079	Audit / supervision activities / mgnt decl.	**N**	N	2.1.1.2.1 B
ELENA		18.386.455		Audit / supervision activities / mgnt decl.	N	N	2.1.1.2.1 B
Financial Instruments			89.289.000	Audit / supervision activities / mgnt decl.	N	N	2.1.1.2.1 B
Subsidy to ACER			13.562.000	Audit / supervision activities	N	N	2.1.1.2.1 B
Other operational expenditure	50.157.802	518.410	123.000	Estimated RER <2%	N	N	(Partly under 2.1.1.2.1 A and 2.1.1.2.1 B)
Administrative expenditure	1.876.193			Estimated RER <2%	N	N	(Partly under 2.1.1.2.1 A and 2.1.1.2.1 B)
Totals (coverage)	***254.263.062***	***19.106.881***	***958.868.923***				
AAR Annex 3	*1.232.238.866*						

This overview table shows that:

- Based on the main indicator results available, overall suitable controls were in place in 2018 and worked as intended;
- The reservation on the Seventh Research Framework Programme (FP7) overpayments is maintained as the residual error rate remains persistently above the 2% materiality threshold defined in Annex 4 'Materiality Criteria';
- No new reservation has been considered in this AAR as Management has reasonable assurance that overall suitable controls are in place and work as intended (taking into account also the multiannual character of the main programmes); risks are being mitigated and/or monitored; improvements and reinforcements are being implemented.

The FP7 reservation is addressed in Section 2.1.5 of this AAR.

2.1.1.2. Control effectiveness

2.1.1.2.1 Legality and regularity of the transactions

DG ENER has set up internal control processes aimed to ensure the adequate management of the risks relating to the legality and regularity of the underlying transactions, taking into account the multiannual character of programmes as well as the nature of the payments concerned.

Overall amount at risk:

In the context of the protection of the EU budget, at the Commission's corporate level, the DGs' estimated overall amounts at risk and their estimated future corrections are consolidated.

For DG ENER, as displayed in table 2.2 below, the estimated overall amount at risk *at payment*[37] for the 2018 payments is EUR 7.47 million. This is the AOD's best, conservative estimation of the amount of *relevant expenditure*[38] during the year (EUR 1.221 billion) not in conformity with the applicable contractual and regulatory provisions at the time the payment is made.

This expenditure will be subsequently subject to ex-post controls and a sizeable proportion of the underlying error will be detected and corrected in successive years. The conservatively estimated future corrections[39] for those 2018 payments made are EUR 2.91 million. This is the amount of errors that the DG conservatively estimates to identify and correct from controls that it will implement in successive years.

The difference between those two amounts leads to the estimated overall amount at risk at closure[40] for the 2018 payments of EUR 4.56 million.

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[37] In order to calculate the weighted average error rate (AER), the *detected or equivalent* error rates have been used; *see note to Column (7) to the table*.

[38] "*relevant expenditure*" during the year = payments made, minus new pre-financing paid out, plus previous pre-financing cleared.

[39] Based on the adjusted 7-years historic average of recovery orders, which is the best available indication of the corrective capacity of the ex-post control systems implemented by the DG over the past years. The ex-post error rate is not applied to payments made to ACER and F4E JU, to pre-financing and to administrative expenditure.

[40] For some programmes with no set *closure* point (e.g. EAGF) and for some multiannual programmes for which corrections are still possible afterwards (e.g. EAFRD and ESIF), all corrections that remain possible are considered for this estimate.

Table 2.2. – Estimated overall amount at risk at closure (in EUR; full year)

Activities	Payments made	Minus new prefinancing	Plus cleared prefinancing	Relevant expenditure	Average error rate (%)		Estimated overall amount at risk at payment	Average recoveries and corrections (adjusted ARC; %)	Estimated future corrections	Estimated overall amount at risk at closure
	As per AAR Annex 3, table 2	As per ABAC DWH BO report on prefinancing	As per ABAC DWH BO report on prefinancing	= (2) - (3) + (4)	Detected	Estimated	= (5) x (6)	Based on 7Y-avg adjusted historic recovery orders (as per ABAC DWH BO report on corrective capacity) Not applicable to pre-financing, administrative expenditure and disbursements to F4E and ACER.	= (5) x (8)	= (7) - (9)
(1)	(2)	(3)	(4)	(5)	(6)		(7)	(8)	(9)	(10)
EEPR grants	159.100.247		8.742.913	167.843.160	1,30%		2.181.961	0,70%	1.174.902	**1.007.059**
FP7 grants	39.287.434		34.185.139	73.472.573	5,26%		3.864.657	1,29%	947.796	**2.916.861**
H2020 grants	4.043.402	2.753.781		1.289.621	3,32%		42.815	0,02%	258	**42.557**
Contribution to F4E JU	659.910.844	659.910.844	700.448.515	700.448.515		0,00%	0	0,00%	0	**0**
Nuclear decommissioning (CPMA / EBRD / SIEA)	195.984.079	193.826.443	96.139.729	98.297.365		0,50%	491.487	0,50%	491.487	**0**
ELENA	18.386.455			18.386.455		0,50%	91.932	0,00%	0	**91.932**
Financial Instruments	89.289.000			89.289.000		0,50%	446.445	0,00%	0	**446.445**
Subsidy to ACER	13.562.000	13.562.000	12.978.502	12.978.502		0,00%	0	0,00%	0	**0**
Other operational expenditure	50.799.212	6.347.330	13.129.297	57.581.179		0,59%	339.729	0,50%	287.906	**51.823**
Administrative expenditure	1.876.193		15.160	1.891.353		0,50%	9.457	0,50%	9.457	**0**
Total	**1.232.238.866**	**876.400.398**	**865.639.255**	**1.221.477.723**			**7.468.484**		**2.911.806**	**4.556.678**

Notes:

- Column (3) 'Minus new pre-financing': New PF actually paid by out the DG itself during the FY (i.e. excluding any PF received as transfer from another DG);
- Column (4) 'Plus cleared pre-financing': PF actually having been cleared during the FY, based on accepted invoices (i.e. their 'delta' in FY actuals, not their 'cut-off' based estimated 'consumption');
- Column (5) 'Relevant expenditure': this is a concept that intentionally combines elements from the budgetary accounting and from the general ledger accounting for the purpose of equivalence with the ECA's scope of the EC funds with potential exposure to L&R errors (see the ECA's AR methodological Annex 1.1 point 7); The negative relevant amount reported for the line 'Financial Instruments' is due to and corresponds to the inclusion of the DG MOVE cross-subdelegated amount.
- Column (6)
    - **The calculated weighted average error rate is 0.6%**
    - The estimated error rate for administrative expenditure increased from 0.2% to 0.5% between the 2017 AAR and the 2018 AAR to reflect the error rate identified by ECA in their 2017 Annual Report (Source: 2018/C 357 - page 311; § 10.14): 'The overall audit evidence indicates that the level of error in spending on 'Administration' was not material. …The estimated overall level of error of 0.5%.');

  Column (8) 'Average recoveries and corrections %': The adjusted recovery rate is 0.7%. The seven-year historic average of recovery orders corresponds to 3.1% (as per ABAC DWH BO report on corrective capacity). However, the % has been adjusted conservatively to only take into account recoveries from the last seven years with a recovery context type 'irregularity' and 'error'. This % has been further adjusted by deducting certain recoveries of pre-financing made in previous years, which under today's rules should be considered as being of recovery context type 'none' (instead of 'irregularity'). However, for FP7 and H2020 payments, the correction rate used in this column corresponds to the difference between the representative error rate *(5.26%)* and the residual error rate *(3.97%)*. For H2020 payments, the correction rate used in this column corresponds to the difference between the respective detected error rate *(3.32%)* and the residual error rate *(3.30%)*.

  Also note that the 0.7% is capped at 0.5% in the case of NDAP and of other operational expenditure to avoid negative amounts at risk at closure and is not applied to pre-financing, administrative expenditure and to payments made to F4E JU and ACER, in general not subject to ex-post recoveries. Eventually, this % is the best available indication of the expected corrective capacity of the ex-post control systems implemented by the DG over the past years. As payments made to F4E and ACER correspond to approximately 58% of the relevant expenditure, *the average, adjusted and weighted average of corrections is 0.4%.*

Control effectiveness is discussed hereunder, making due consideration for the management mode.

Section A treats controls exerted over the two main programmes directly managed by DG ENER as well as the cross-subdelegations given to other Commission's services.

Section B outlines controls exerted over the budget entrusted to other entities.

A) Direct management

This section provides details on the control effectiveness for the two programmes under direct management that had the highest payments in 2018 (FP7 and EEPR), as well as for the cross-subdelegations given to other Commission's services.

The general control objective, as stated in Annex 4, is to ensure for each of these programmes that the residual error rate, i.e. the level of errors which remain undetected and uncorrected, does not exceed 2% by the end of each their respective management cycle. Indeed, because of its multi-annual nature, the effectiveness of the control strategy can only be fully measured and assessed in the final stages of the Programmes, once the ex-post control strategy has been fully implemented and systematic errors have been detected and corrected.

The question of being on track towards this control objective is (re)assessed annually, in view of the results of the implementation of the ex-post audit strategies and taking into account both the frequency and importance of the errors found as well as a cost-benefit analysis of the effort needed to detect and correct them.

a) EEPR

The European Energy Programme for Recovery (EEPR) was designed to inject significant sums into the EU economy quickly in order to stimulate the EU recovery out of recession, while at the same time contributing to the goals of the European energy policy. To this end, all the money had to be committed by the end of 2010.

Given that the call for proposals, their evaluation and the contracting phase were completed by the end of 2010, this AAR will only focus on the ex-ante monitoring of the execution of the projects and the ex-post control of payments.

In 2018, payments made in this context amounted to EUR 159.1 million, equal to 12.9% of the total payments made by DG ENER in 2018.

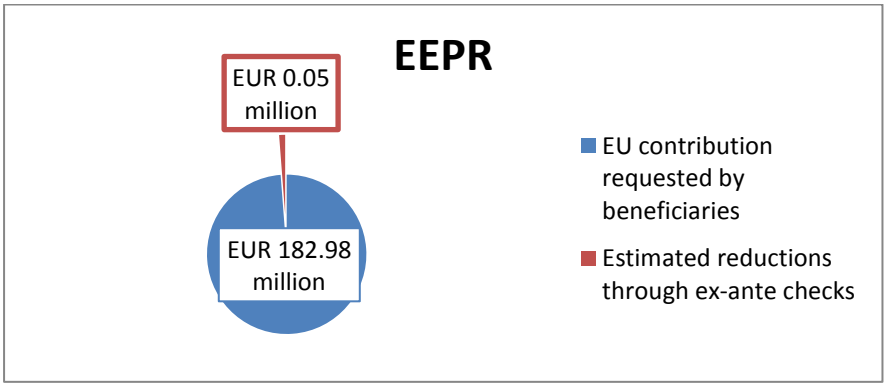
- **Ex-ante monitoring and checks**

The management of the project and the grant agreement comprises the technical monitoring (with the help of independent technical experts) of the grant agreements/decisions over its lifetime, and ex-ante checks of participants' cost claims. These ex-ante checks also include audit certificates on cost statements established by external auditors, when required by the grant agreement or decision, and the processing of transactions through Commission's financial circuits to ensure that the transactions authorised are in compliance with the applicable rules.

As a result of ECA's findings related to errors in public procurements awarded by beneficiaries of EEPR grants, DG ENER has ensured that checks on procurements are made before the payments.

The chart below outlines the reductions made to the EU contribution claimed by grant beneficiaries. Ex-ante checks have prevented the payment of around EUR 54 413, representing about 0.03% of the requested EU contribution.

Effectiveness of ex-ante checks: reductions to the requested EU contribution[41]



For the reporting year, the ex-ante checks only detected around 0.03% undue EU contribution from the payments requested. This relatively low level of findings does not mean that the controls were not effective, but rather that all supporting documents supplied ensured that the expenditure was covered by the legal basis.

- **Ex-post controls and recoveries**

The fourth stage includes the ex-post audits as well as the recovery of any amounts found to have been paid in excess of the amount due.

EEPR audits carried out by DG ENER

The audit coverage foreseen in the DG ENER 2018 audit work programmer for EEPR is the following: the strategy for the next few years is to reach coverage of 100% of the number of projects and beneficiaries. In principle, beneficiaries are audited twice (it could be for different projects) to get reasonable assurance that submitted costs claims are free of errors. Beneficiaries will not be selected a third time unless the previous audits have revealed material errors.

Table 2.3 shows that out of the 85 audits launched by the end of 2018, of which 81 have been finalised (6 in 2011, 8 in 2012 and 22 in 2013, 10 in 2014, 16 in 2015, 10 in 2016 and 7 in 2017 and 2 in 2018).

[41] Audit results implementation and budget capping not included.

Table 2.3 – EEPR cumulative audit coverage (2010-2018)

Number of audits launched	Number of closed audits	Total amount audited (EC share in EUR)	Overall errors (in EUR) in favour of the Commission	Error rate in favour of the Commission
85	81	1 681 805 671	–18 523 828	–1.1%

EEPR audits carried out by the European Court of Auditors (ECA)

ECA analyses the EEPR payments as part of their work on the annual 'Statement of Assurance' (DAS). To ensure that beneficiaries do not have the perception of being audited twice, DG ENER's own ex-post auditors accompany the Court when they visit the beneficiary.

By the end of 2018, ECA had performed 25 audits on EEPR Beneficiaries representing a total EC share audited of EUR 544 648 312.

Combined results of all EEPR audits

The cumulative audit coverage of the program, taking into account the result of the 81 DG ENER and 25 ECA audits, reached 85.65% at the end of 2018. It is based on the audited contributions (EC and Court of Auditors) and the non-audited EC contributions of audited companies for which no adjustment was found during previous audit(s).

Part of the EC share audited by the ECA has been subject to an audit by DG ENER, so the amount taken into account as EC share audited by ECA alone is EUR 342 318 085.

The total EC share audited for these 106 relevant audits is EUR 2 024 124 755 and the findings amount to a total of negative adjustments of EUR –26 274 624 (i.e. –1.30%).

Calculation of the residual error rate (RER)[42]

To take into account the potential risk of errors by EEPR beneficiaries of not respecting public procurement rules when subcontracting, DG ENER has been applying strengthened ex ante and ex-post controls:

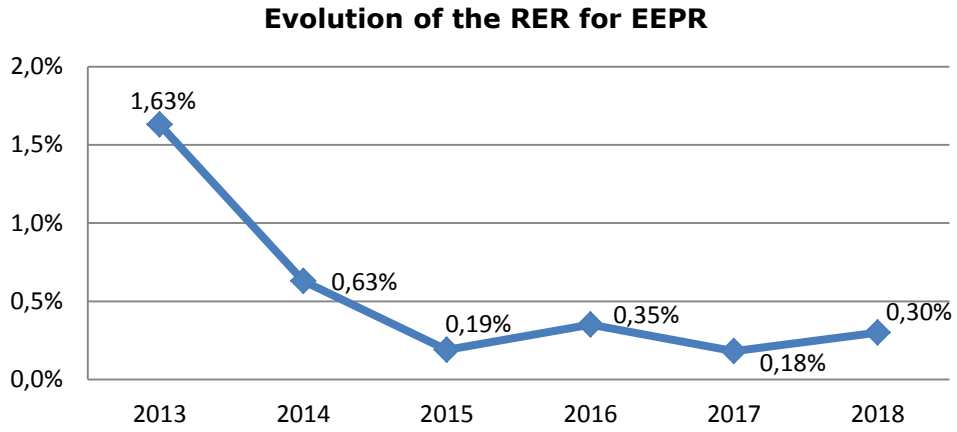
- Ex-ante: internal checks on public procurement are carried out before payments are made to beneficiaries;
- Ex-post: high audit coverage.

As a result of the above mentioned approach, the RER is maintained below the materiality threshold of 2% and corresponds to 0.30% for 2018, as detailed in table 2.4.

[42] More information on the materiality criteria is outlined in Annex 4.

Table 2.4 – Calculation of the residual error rate for EEPR

Total EC share approved, in EUR (P)	2 313 303 161
Total EC share of all audited beneficiaries, cleaned from systematic error, in EUR (A1)	2 032 824 596
Total EC share of audited cost statements in EUR (A2)[43]	2 024 124 755
Total amount in EUR of negative adjustments as a result of audits (Err)[44]	–26 274 624
Total EC share of audit adjustments in EUR[45] not implemented by Q1 2018 (NonImpErr)	–2 596 276
Residual error rate[46]	**–0.30%**



In conclusion, given the audit results, the high audit coverage and the fact that the residual error rate is well below 2%, reasonable assurance can be given on EEPR expenditure.

↳ Implementation of audit results

By the end of 2018, the adjustments have been finalised for 108 participations, of which:

- 43 with adjustments in favour of the Commission (EUR 19 474 563);

[43] The difference between the amounts of EU contribution indicated under (A2) and (A1) is considered free of errors as the payments concerned were made to beneficiaries for which there were no audit findings and for which all control systems were in place.

[44] This is the EU contribution directly resulting from the ineligible costs identified by the auditors and it may differ from the adjustments actually implemented (for instance due to budget limitations, to technical evaluations modifying the adjustments, or to additional eligibility-proving documents being provided during the contradictory procedure with the beneficiaries).

[45] Only results in favour of the Commission.

[46] Residual Error rate $ResER\% = \frac{((P-A1)\times\left(\frac{Err}{A2}\right))+NonImpErr}{P}$

- 5 with adjustments in favour of the beneficiary (EUR 166 062);
- 60 with no adjustment.

Table 2.5 shows the cumulated amounts of the implementation of EEPR audits in favour of the EC. It has to be noted that it is not unexpected to have open cases at this stage as there might be 18 months before new declarations are received from beneficiaries.

Table 2.5 – Implementation of EEPR ex-post audit results in favour of the EC (period 2010-2018):

Adjustments in contradictory procedure		Adjustments implemented	
Number	Funding adjustment EUR	Number	Funding adjustment EUR
1	–2 596 275	42	–16 878 287

78% of the adjustments (or EUR 13 226 264) were implemented through recovery orders and 22% through offsetting from subsequent payments.

b) The Seventh Research Framework Programme (FP7)[47]

The general control objective for the Seventh Research Framework Programme (FP7) is to ensure that the residual error rate, i.e. the level of errors which remain undetected and uncorrected, does not exceed 2% by the end of the management cycle. Indeed, because of its multi-annual nature, the effectiveness of the control strategy can only be fully measured and assessed in the final stages of the Programme, once the ex-post control strategy has been fully implemented and systematic errors have been detected and corrected.

The question of being on track towards these control objectives is to be (re)assessed annually, in view of the results of the implementation of the ex-post audit strategies and taking into account both the frequency and importance of the errors found as well as a cost-benefit analysis of the effort needed to detect and correct them.

Payments related to FP7 grants represented 3.19% (i.e. EUR 39.29 million) of the total payments made in 2018 by DG ENER (against 2.23% in 2017).

The control systems are divided into two distinct stages, each with specific control objectives, as detailed in Annex 5. Key indicators have been defined for each stage. In addition, since the evaluation of the calls for proposals and contracting were completed before January 2015, this AAR will only focus on the ex-ante monitoring of the execution of the projects and the ex-post control of payments.

- **Ex-ante monitoring and checks**

This stage concerns the management of the project and the grant agreement and comprises the technical monitoring and also ex-ante checks of participants' cost

[47] Payments for H2020 were also made in 2018 for a total of EUR 4.04 million (i.e. 0.33% of the total payments of DG ENER). Part of this amount was cross-subdelegated to DG CNECT (EUR 0.2 million in 2018), as referred to in Section 2.1.1.2.1.B. The remaining part is not covered in this AAR due to its limited amount.

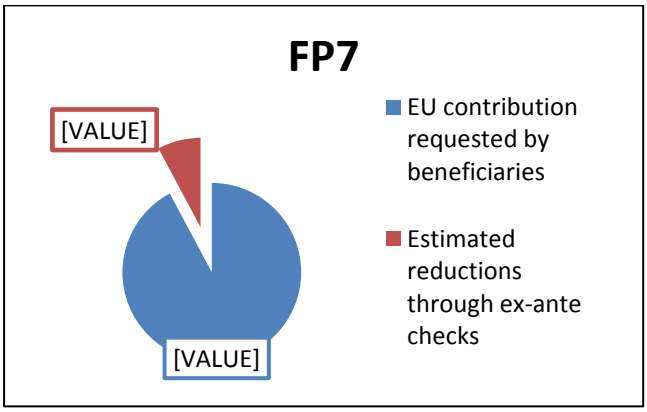
claims. The purpose of these ex-ante checks is to ensure that the transactions authorised are in compliance with the applicable rules.

In addition, every cost claim over EUR 375 000 is accompanied by a certificate on the financial statement (CFS), issued by a qualified auditor or a Certified Public Official. The Research family, as well as the European Court of Auditors, have identified that these certificates do not always identify all ineligible expenditure in the cost claim. To assess the effect of this weakness DG RTD carried out a study that showed that cost claims with a CFS had an average error rate 50% lower than those without. This shows that, while not perfect, these CFSs do have a significant positive effect.

Control effectiveness:

The chart below outlines the reductions made to the EU contribution claimed by grant beneficiaries. Ex-ante checks prevented the payment of around EUR 7.37 million, representing about 8.5% of the requested EU contribution. The main errors detected in cost claims concerned inconsistencies between the information supplied by grant beneficiaries and that included in the audit certificate when submitted (amount of costs, methods of calculation, periods, etc.), audit certificates incomplete, missing or not provided by a qualified auditor, arithmetical errors, costs incurred outside the eligibility period or not covered by the legal basis.

Effectiveness of ex-ante checks: reductions to the requested EU contribution[48]



- **Ex-post controls and recoveries**

This stage includes the ex-post audits as well as the recovery of any amounts found to have been paid in excess of the amount due.

Common ex-post audit strategy of the Research Directorates General

Since 2007, DG RTD has adopted a common audit strategy intended to ensure the legality and regularity of expenditure on a multi-annual basis including detecting and correcting systematic errors. The audits examine only interim and final claims by beneficiaries. Transactions relating to pre-financing are not included in the population subject to audit.

[48] Audit results implementation and budget capping not included.

Since 2012, a Common Representative audit Sample (CRS) has been introduced across the research family to reduce the audit burden on beneficiaries by reducing the number of repeat audits whilst continuing to provide a representative view of the implementation of the Research Framework Programmes (FP). The CRS provides an estimate, via a representative sample of cost claims across the Research Family, the overall level of error in the Research FP, across all services involved in their management.

The CRS is complemented by risk-based audits, selected according to one or more risk criteria, aiming at detecting and correcting as many errors as possible, for instance by targeting the larger beneficiaries and identifying possibly fraudulent operators. These audits are also referred to as 'corrective' audits.

Since 2014, the Common Audit Service (CAS) in DG RTD has undertaken all audits for the DGs that fund research grants (amongst which DG ENER).

Different indicators are calculated to provide a comprehensive view of legality and regularity:

- **Representative Error Rate**: This is the error rate derived solely from the results of CRS, extrapolated to the overall populations and calculated for each FP as a whole. This error rate provides an estimate of the level of error in a given framework programme at the time of the audits, but it does not factor in the follow-up and corrections/recoveries undertaken by the Commission services after the audit, nor does it provide information on the net final financial impact of errors.
- **Residual Error Rate**: The residual error rate, on a multi-annual basis, is the extrapolated level of error remaining after corrections/recoveries undertaken by Commission services following the audits that have been made. The calculation of the residual error rate, as shown in **Annex 4**, is based on the following assumptions:

  (1) all errors detected will be corrected;

  (2) all non-audited expenditure of audited beneficiaries is clean from systematic material errors so that the residual error rate in this expenditure can be estimated to be equal to the non-systematic part of the representative error rate (for the expenditure subject to extension of audit findings this is only assumed when the respective extension procedures have been closed).

The residual error rate develops over time and depends on the assumptions set out above.

To derive assurance, DG ENER is using the residual error rate, which is considered by the Research DGs as a reliable and acceptable indicator for the purposes for which it was intended, i.e. as legality and regularity indicator on the progress made, through its ex-post strategy, in dealing with errors over a multi-annual basis. However, it remains an estimate as long as not all cost claims have been received and not all cases of extension of audit findings have been fully implemented yet.

Results of FP7 ex-post audits

In the case of FP7, the year 2018 was the tenth year of implementation of the audit strategy.

The Research and Innovation family as a whole had a target of 4 520 audit results covering 64.7% of FP7 expenditure completed by the end of 2018, thus exceeding the original target by 11%.

The percentage of FP7 expenditure covered by the audits (64.7%) refers to the value of the participations of the audited beneficiaries. It includes both the fully audited participations (8.5%), also referred to as the 'direct' coverage, and the non-audited participations which nevertheless, after the full treatment of audit results, are clean from systematic errors (56.2%), also referred to as the 'indirect' coverage.

Detailed data on DG ENER FP7 audit coverage are shown in table 2.6:

Table 2.6 – FP7 audit coverage

	Planned cumulative period	Achieved cumulative period	Planned in 2018	Achieved in 2018
Number of closed audits	165	189	0	7[49]
Total amount audited (EC share in EUR)	n.a.	88 429 997	n.a.	5 190 382

The error rates resulting from the audit work on DG ENER's FP7 projects are:

- **Common[50] Representative Error Rate (RepER)**: Based on 477 cost statements for which the audit is completed (98% out of a sample of 486) this error rate is **5.26%**. The remaining cases are still subject to contradictory procedures with the beneficiaries; consequently, the Common Representative Error Rate may still develop.
- **Residual Error Rate (RER):** At this point in time, this error rate amounts to **3.97%**. As it is above the materiality threshold of 2%, **DG ENER maintains the reservation for FP7**[51]. It also has to be noted that the RER may still vary following the development of the Common Representative Error rate.

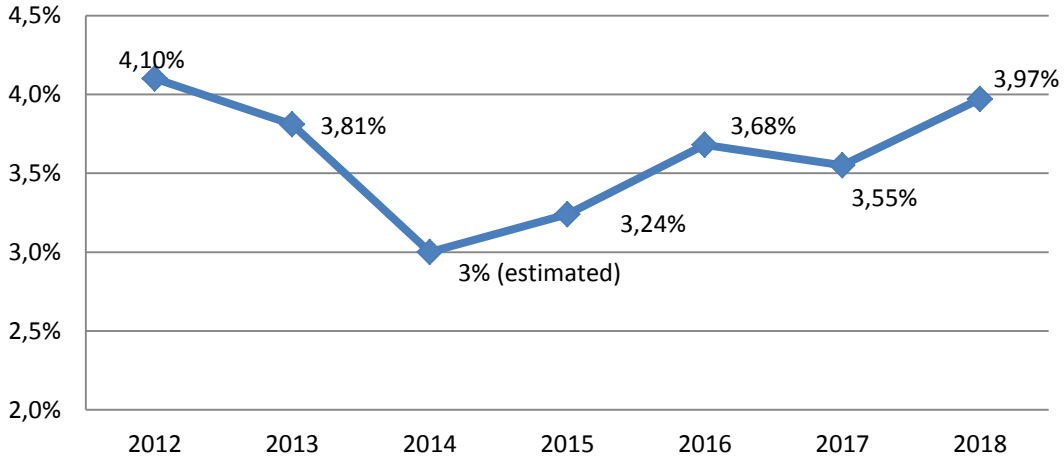
These results include the partial results of the third and last Common Representative Audit Sample (launched in 2016). They are concordant with the general expectation that the Common Representative Error Rate resulting from audits of FP7 will be around 5% at the end of the programme.

[49] An audit is considered finalised when the final audit report is sent to the Financial Management Unit for implementation.
[50] i.e. for the Research family.
[51] Developed in section 2.1.5.

Table 2.7 – Calculation of the residual error rate for FP7

R&I Family level Representative Error Rate (RepER%)	–5.26%
R&I Family level systemic share of the RER (RepERsys%)	–2.64%
Total EU contribution (P)	EUR 673 539 819
Total amount audited (EC share in EUR) (A)	EUR 88 429 997
Total non-audited participations of audited beneficiaries (E)[52]	EUR 151 930 352
Residual error rate[53]:	**–3.97%**

Evolution of the RER for FP7



Conclusions on the ex-post audits and the error rates of FP7

The audit strategy has been fully implemented. The Common Representative Error Rate for FP7, calculated on a multi-annual basis, is a bit above 5%. The residual error rate is 3.97 for DG ENER.

Since only three CRS audits remain open, it can be assumed that the final Residual Error Rate will be around 3.3%. These results are in line with the conclusions expressed in the AARs over the years.

These amounts do not necessarily mean that there is a loss to the Community Budget. Many of the projects spend more than the capped budget, and so the real loss to the Community budget will be lower than when estimating the financial impact by using the error rates above.

The reservation in the declaration of assurance for the FP7 expenditure is addressed in Section 2.1.5.

[52] This amount excludes EU contribution of beneficiaries with ongoing extrapolation cases.

[53] Residual Error rate $ResER\% = \frac{(RepER\% \; x \; (P-A)) - (RepERsys\% \; x \; E)}{P}$

DG ENER participated, throughout the course of the programme, to the common continuous effort to mitigate the risk of error in FP7 expenditure. This effort included actions regarding simplification, communication, improvement of ex-ante controls, ex-post audit coverage together with the recovery of overpayments and the extrapolation of systemic errors to unaudited cost claims of the same beneficiaries in terms.

However, it is clear that the 2% residual error target for FP7 will not be attained. Nevertheless, the lessons learned from FP7 audits have been used in the development of Horizon 2020 programme's general framework.

Implementation of audit results

In total, over the period 2010-2018, the results of the FP7 audits relate to 218 participations:

- 5 are still in the contradictory procedure with the beneficiaries (most likely in favour of the Commission for EUR 1.11 million);
- 213 with implemented results:
  - 96 in favour of the Commission (EUR 3.92 million);
  - 62 in favour of the beneficiaries;
  - 55 resulting in 'zero' adjustments.

Table 2.8 – Implementation of ex-post audit results in favour of the EC (2010-2018)

Results from external audits		Adjustments in contradictory procedure		Adjustments implemented	
Number	Funding adjustment (EUR)	Number	Funding adjustment (EUR)	Number	Funding adjustment (EUR)
101	–5 032 132	5	–1 115 627	96	–3 916 505

Around 58% of the adjustments implemented were recovered through offsetting from subsequent payments and 42% through recovery orders.

Implementation of extrapolated audit results

The extrapolation process allows correcting systemic errors of a beneficiary detected by an audit in all his ongoing participations. These corrections stem from audits made by DG ENER or other DGs in the research family where systematic errors were found.

As can be seen from the table 2.9, by the end of 2018, 180 such participations were found: the beneficiaries were asked to rectify the errors in DG ENER projects and to submit revised costs statements. From the 101 participations concerned by systematic errors, 56 participations have been corrected, of which 49 in favour of the EC.

The Commission closely monitors the implementation of extrapolation cases. It is not unexpected to have open cases at this stage as there might be 18 months before new declarations are received from beneficiaries.

Table 2.9 – Implementation of extrapolation of FP7 audit results (2010-2018)

Participa-tions with expected systematic errors	Participa-tions without systematic errors	Implemented cases				
		In favour of EC		In favour beneficiary		Participations to be implemented[54]
		Number	Value (EUR)	Number	Value (EUR)	
180	79	49	–1 397 820	7	91 493	44

Tables 2.8 and 2.9 together show that, by the end of 2018, EUR 5.31 million were recovered following audits of FP7.

↳ Liquidated damages

Liquidated damages are due where a beneficiary has overstated expenses and has in consequence received unjustified EU contribution. Liquidated damages will only be applied where the unjustified contribution exceeds 2% of the total contribution claimed and accepted for the given period(s) ('de minimis' rule corresponding to the materiality level of ECA).

By the end of 2018 DG ENER identified liquidated damages for 77 cases under FP7:

- Debit notes were already issued for 56 cases for a total amount of EUR 425 885;
- For 11 cases the amounts due were below the threshold of EUR 200, so they were not recovered;
- Five cases with identified liquidated damages in 2015 were cancelled in 2016 and 2017 because further to information received from the beneficiaries the ineligible amounts were adjusted and liquidated damages were no longer applicable;
- The remaining five cases will be treated in 2019.

c) Cross-subdelegations

As in previous years, DG ENER has cross-subdelegated a number of activities to different services within the Commission, in order to arrange the provision of certain operations more efficiently. Being a Commission service itself, the AOD of the cross-delegated service is required to implement the appropriations subject to the same rules, responsibilities and accountability arrangements.

The cross-delegation agreement requires the AOD of the concerned DGs to report on the use of these appropriations. In their reports for the year 2018, the AODs did not communicate any events, control results or issues which could have a material impact on assurance.

In 2018, DG ENER gave cross-subdelegations to DGs ECFIN, CNECT, JRC, DIGIT, for the following amounts and purposes:

- To **DG ECFIN**: The total payments under ELENA facility in 2018 amounted to EUR 18.39 million. ELENA (European Local Energy Assistance) facility is managed

[54] Cases to be implemented are those for which the Commission has written to the beneficiaries requesting them to submit revised cost statements to correct the systematic issues detected.

by DG ECFIN on the basis of cross delegation agreements given by DG ENER and DG MOVE.

ELENA provides Project Development Assistance (PDA) grants to help project promoters develop, structure and launch investment projects/programmes in the fields of energy efficiency, distributed renewables and clean urban transport. ELENA co-finances eligible project development costs such as those related to investment-specific energy audits, feasibility studies, legal, economical, financial and technical development of investments, preparation and launch of tendering procedures, contracting and financial structuring.

For the years 2009-2013, the ELENA facility was delivered in cooperation with the EIB, KfW, EBRD and CEB. For the years 2014 onwards, only EIB has continued to deliver ELENA.

Use of budgetary resources

In the 2014-2020 MFF, further budget has been allocated to ELENA under Horizon2020 for the years 2014-2020, by DG ENER and DG MOVE. The additional allocation under H2020 and the increased budget brought important changes in the facility and ELENA now focuses more on the innovative aspects of energy efficiency, renewable energy and sustainable transport projects. Moreover private entities are now eligible beneficiaries of ELENA grants. In 2018 the eligibility of investment programmes supported by ELENA was extended to residential buildings.

Concerning Elena Facility, 47.09 million of commitment appropriations, for the completion of the "Intelligent Energy" programme, were still outstanding by end 2017, of which EUR 6 million were paid in 2018.

In addition, EUR 51.68 million of commitment appropriations were outstanding for other activities as of 31 December 2017. Two new commitments were validated in 2018 for a total amount of EUR 127.02 million. The first commitment is for EUR 77.29 million of additional budget for technical assistance for EE investments in residential buildings under ELENA 2017 Delegation Agreement. The second commitment is for the amount of EUR 49.8 million for a new ELENA Contribution Agreement for 2018.

Payments in 2018 to the ELENA Trust accounts amounted to EUR 18.39 million, including EUR 9.2 million corresponding to new pre-financings. One recovery order was issued in 2018 for an amount of EUR 999 681, following the closure of the ELENA EIB 2009 Facility.

As a result of the new commitments, the 'Reste à liquider' for the whole ELENA facility as of 31 December 2018 amounted to EUR 224.42 million (which also includes the positions related to DG MOVE), implemented by the EIB under the management of DG ECFIN.

Implementation

DG ECFIN is responsible for monitoring the management of the instrument and reports regularly to DG ENER on the basis of a cross-delegation agreement given by DG ENER.

The on-going ELENA agreements with the entrusted entities are under implementation. A few Agreements were not implemented, as the entrusted entities did not allocate the available ELENA funds to any project within the

contracting deadline set in the Agreements[55].

A total of 95 projects have been approved for ELENA support for a total of EUR 165.8 million of which 29 projects are successfully completed, 58 projects are under implementation and 8 are in the Grant Agreement signature phase. The implementation of these projects makes use of the funds allocated under the 2009-2013 and 2017 co-delegations and of the funds made available directly to the EIB by DG ENER and DG MOVE.

DG ECFIN carried out four monitoring visits during the year. Because of the monitoring visit in October 2018, one project was withdrawn, since the project never started.

Lastly, together with DG ECFIN and DG MOVE, DG ENER has organised in November 2018 an ELENA steering Committee meeting with the EIB, as well as a technical meeting in June 2018. These meetings aimed at reviewing the progress of the facility (state of play, gaps and necessary corrective actions) and preparing the forthcoming activities in the framework of the Horizon 2020 WPs 2018-2020.

- To **DG CNECT**: From the outstanding commitments of EUR 281 292 from 2015 for HORIZON 2020 programme, EUR 202 015 were paid in 2018.

- To **JRC**: From the outstanding EUR 669,724 of commitment credits for the Nuclear Safeguards available in 2018, EUR 517,187 payments were made in 2018.

- To **DG DIGIT**: EUR 3 723 were committed in 2017 for actions supporting the energy policy with EUR 1 224 paid in 2018.

B) Indirect Management and Direct management by other services

This section reports and assesses the elements that support the assurance on the achievement of the internal control objectives as regards the results of the DG's supervisory controls on the budget implementation tasks carried out by other Commission DGs and entrusted entities distinct from the Commission, i.e.:

- Co-delegations;
- The INEA and EASME Executive Agencies;
- The European Bank for reconstruction and Development and the National Agencies SIEA and CPMA (for Nuclear Decommissioning Assistance);
- The F4E Joint Undertaking;
- The ACER Decentralised Agency.

For all these cases, DG ENER's supervision arrangements are based on the principle of controlling 'with' the relevant entity. For details, please refer to Annex 5, section on indirect management

a) Co-delegations

The Commission may delegate powers concerning a given budget line to one or

[55] This was the case of ELENA KfW 2013 and ELENA CEB 2011, where the funds paid to the Trust Accounts were recovered, and committed funds were eventually decommitted.

more authorising officers by delegation. In other words, various AODs are responsible for the same item of expenditure, but each one for a specific type of transaction.

For DG ENER, this was the case in 2018 with PMO and OP, with total payments amounting to EUR 12.43 million. Being Commission services themselves, these DGs are required to implement the appropriations subject to the same rules, responsibilities and accountability arrangements as DG ENER.

b) Executive Agencies (INEA and EASME)

1- EASME

The Executive Agency for Small and Medium-sized Enterprises (EASME) replaced and succeeded the Executive Agency for Competitiveness and Innovation (EACI) and was established for the period 1 January 2014 to 31 December 2024[56].

Its mandate includes the management of funding actions related to the activities of seven DGs (GROW, RTD, ENV, CLIMA, MARE, CONNECT and ENER). In the field of energy, these actions contribute to:

- The Framework Programme for Research and Innovation 2014-2020 (Horizon 2020) - parts of 'Part II – Industrial Leadership' and 'Part III Societal challenges';
- The Competitiveness and Innovation Programme 2007-2013.

DG ENER defines the policy, the strategic objectives and the priority areas of action while EASME manages the entire project lifecycle, communicates and interacts with beneficiaries and gives key feedback to DG ENER. DG ENER is responsible for devising and implementing supervision and monitoring strategy towards EASME.

In line with the legal obligation stemming from Article 25(1) of "The Framework Regulation for executive agencies"[57], requiring the Commission to carry out an external evaluation of the operation of each executive agency every three years, an external evaluation of EASME is currently underway. To this end, DG RTD appointed external evaluators to submit the final report of their evaluation of EASME in the first quarter of 2019. The purpose of this evaluation is the periodical (tri-annual) evaluation of the operation of EASME and covers all the tasks carried out by the Agency during the years 2014-2016.

The evaluation will help the Commission services to assess whether the functioning of the agency has yielded the expected positive results as estimated in the Cost-Benefit Analysis for delegating task to the executive agency and identify potential areas of improvement. In addition, the results will feed into a future cost-benefit analysis to assess the opportunity of expanding/modifying the executive agency's mandate after the expiry of its current mandate. In 2018, DG ENER did not pay (directly) any subsidy to EASME.

Supervision arrangements

The Agency and its parent DGs signed a Memorandum of Understanding

[56] Commission Implementing Decision 2013/771/EU, repealing Commission Decisions 2004/20/EC and 2007/372/EC.
[57] Council Regulation (EC) No 58/2003 of 19 December 2002 laying down the statute for executive agencies to be entrusted with certain tasks in the management of Community programmes.

specifying the modalities and procedures of interaction.

In performing its tasks, the Agency works closely together with its parent DGs. Project-level performance in terms of output and impact is measured by the EASME and closely supervised by the parent DGs.

Close contacts between the Agency and its parent DGs took place at different levels:

- Steering Committee meetings with all parent DGs (it met four times in 2018): this Committee is responsible for the supervision of the Agency. Its tasks include the adoption of the Agency's administrative budget and the Annual Work Programme (comprising detailed objectives and performance indicators) and any special rules needed to implement the right of access to documents, as well as the Annual Activity Report and the Annual Accounts. It is also responsible for the Agency's implementing rules for personnel management and adopts and applies measures to combat fraud and irregularities;
- Participation in the parent DGs' management meetings;
- Regular programme-specific meetings;
- Biannual reports provided on the use of resources and performance of the tasks;
- Further regular contacts at unit and working level, regarding the implementation of the Agency's work programme (for H2020 and the legacy of the IEE programme).

DG ENER received the draft Annual Activity Report of the Agency, coordinated and reviewed by the Steering Committee. In 2018, the estimated residual error rate is above the materiality threshold for CIP Intelligent Energy Europe II (2.57-2.62)[58]. For this reason, the Agency Director, in his capacity as AOD, signed the declaration of assurance as regards the year 2018 with a reservation for the programme. Mitigating actions have already been established to reduce these rates.

The audits of the Internal Audit Service and of the European Court of Auditors provides additional elements of assurance.

- ECA:
    - In its yearly report, ECA found the 2017 annual accounts of the Agency legal and regular in all material aspects and that they presented fairly in all material respects the financial position of the Agency. The Court made two observations related to the accounting environment (hierarchical position of the accountant officer and the Agency's accounting system) and e-invoicing in the field of public procurement procedure, to which the Agency provided reply and justification.
- The IAS:
    - Audit on the Management of Human Resources in EASME, resulting in three important recommendations related to (i) completing the HR strategy; (ii) addressing a few points in the recruitment and selection process; and (iii) to map skills and competencies and further improve the workload assessment. The Agency submitted

[58] Budget line: 32.04 53 00.

an action plan assessed as satisfactory by the IAS. All actions have been implemented. The IAS is currently carrying out a follow up on recommendation (i) and (iii) and. Recommendation (ii) will be followed up by the IAS later on.

- Audit on H2020 project management in EASME, resulting in one important recommendation related to the guidance on the plagiarism checks and one issue for consideration to formalise the documentation of project management practices. An action plan has been submitted and accepted by the IAS. The action plan is on-going and is expected to be implemented by 31 March 2019.

These observations made do not impair the assurance received from the Agency.

2- INEA

DG ENER is one of four parent DGs (with MOVE, CNECT and RTD) for the Innovation & Networks Executive Agency (INEA). The current mandate of INEA covers the former TEN-T Executive Agency which was responsible for implementing the TEN-T Programme and the TEN-T projects from the 2000-2006 and 2007-2013 financial perspectives.

Thanks to a mandate approved on 23 December 2013[59], the Agency became the Innovation and Networks Executive Agency from 1 January 2014 and its lifetime has been extended to 31 December 2024.

The Commission has delegated to INEA the task of executing the operational budget and performing tasks linked to the implementation of its delegated Union programmes in the field of transport, energy and telecommunications infrastructure (Connecting Europe Facility programme or 'CEF') and in the field of transport and energy research and innovation (Horizon 2020).

As to DG ENER, the Agency mandate covers the energy part of the CEF programme and the energy research part under the Horizon 2020 programme. DG ENER defines the policy, the strategic objectives and the priority areas of action while INEA manages the entire project life cycle, communicates and interacts with beneficiaries and gives key feedback to DG ENER. DG ENER is responsible for devising and implementing supervision and monitoring strategy towards INEA.

In 2018, DG ENER did not pay (directly) any subsidy to INEA.

Supervision arrangements

The Commission Decision establishing INEA and the Commission Decision delegating powers to INEA set out the governance and supervision arrangements. These are complemented by a specific Memorandum of Understanding (last updated in July 2018 notably to take on board the delegation of Wifi4EU[60] to INEA) signed between the Parent DGs and INEA that contains reporting and supervision provisions and consists of a two-layer document:

- A top layer aiming to harmonise the modalities and procedures of the interaction between the parent DGs and INEA and that includes amongst other:

[59] Commission Implementing Decision 2013/801/EU
[60] The new Wifi4EU initiative under the CEF Telecommunications programme was delegated to INEA as of 1 May 2018. The delegation came from DG CNECT.

- the membership to the Steering Committee, chaired by the Director General of DG MOVE and meeting at least four times a year to ensure that the work of the Agency is in line with the its Annual Work Programme;
- the preparation of the Agency's annual budget;
- the definition of objectives and priorities in the Annual Work Programme of INEA (approved by the Commission);
- the requirement for INEA to report regularly on the performance of tasks (using the main KPIs from INEA's Annual Work Programme), through;
  - Interim reporting (usually the first six months of the year);
  - the Annual Activity Reports;
- the establishment of security related procedures and processes, including Business Continuity Planning;

- A middle layer, with specific provisions for the implementation of Horizon 2020 and CEF.

Within this context, meetings and exchanges of information between the parent DGs with INEA on Horizon 2020 and CEF as well as coordination meetings between INEA and the relevant units in DG ENER on H2020 and CEF take place regularly. These regular meetings, as well as the regular provision of implementation information by the Agency ensure information exchange and to control progress and results in the frame of the supervision of the Horizon 2020 activities of INEA. Meetings dedicated to specific technology areas also take place (smart grids and storage as well as Smart Cities and Communities). In addition to permanent contacts, regular coordination meetings (about every 1.5 months) at working level take place between DG ENER and INEA to review the activities of the Agency.

In 2018, regular meetings between the parent Directorates-General, including DG ENER, and INEA on management, control and audit further expanded this middle layer. These meetings ensure a timely exchange of information on the assurance and supervision matters, and reinforce the coordination on common issues.

In addition, INEA produces monthly overview reporting on all KPIs, execution of administrative and operational budget and multi-annual error rates as well as respect of deadlines (e.g. time-to-grant). Reports are provided regularly by INEA.

Additional sources of assurance

According to the draft Annual Activity Report of the Agency, all the KPIs have met their target and, in particular, the residual error rates are below 2% for the TEN-T and Marco Polo programmes managed by INEA. For the Horizon 2020 Energy programme, the residual error rate is calculated at 2.45%[61]. Besides, the Agency Director, in his capacity as AOD, has signed the declaration of assurance without reservations.

The audits of the Internal Audit Service and of the European Court of Auditors provide additional elements of assurance.

[61] Target: 2%-5% for Horizon 2020.

- The IAS:
    - An audit on "Grants management: project management and payments for H2020 in INEA" was launched in January 2018. The audit assessed the effectiveness of INEA's processes and procedures for project management and payments, as well as the legality and regularity of the underlying transactions. The final audit report, issued by the IAS on 20 December 2018, was favourable, resulting in a single recommendation (rated as "important") on the mitigation of plagiarism risk. An Action Plan was communicated to IAS on 18 January 2019 and accepted by the IAS.
    - INEA has fully implemented the action plan stemming from the audit on "Grant Management: Project Management and Payments for CEF in INEA". By the end of 2018, the measures proposed by INEA to address such recommendation were implemented and are pending the IAS review.
    - In 2017, INEA was subject to an audit on 'HR Management Strategy in INEA'. The final audit report was issued by IAS on 23 January 2018. It contains three identified strengths (strong control environment, a comprehensive and coherent multi-annual HR resources strategy and a service-oriented approach by the HR team) and two important recommendations (one related to HR monitoring and reporting and one on workload indicators). The first recommendation has been implemented in 2018. The second one is due during the first trimester of 2019.

As to the state of play of outstanding open audit recommendations, INEA has currently no outstanding pending issues.

- ECA:

In its yearly audit, ECA found the 2017 annual accounts present fairly, in all material respects, the financial position of the Agency, the results of its operations, its cash flows, and the changes in net assets. The Court made one observation related to the non-introduction of e-procurement, to which the Agency provided reply and justification confirming that the issue is addressed[62] while underlining that the use of e-tendering and e-submission was not introduced as it does not concern the Agency. The procurement activities are implemented only through the use of low value contracts or existing Framework contracts managed by the European Commission services.

INEA was the subject of one of the recommendations of the ECA's annual report for the year 2017, concerning the improvement of the guidance given on cost eligibility under CEF. The recommendation was implemented in January 2019 through the publication of revised guidelines.

3- Conclusion

The reservation issued by EASME does not impair the assurance of DG ENER as it is not related to funds entrusted by DG ENER to the Agency. The regular supervision of EASME and INEA did not identify any other particular events, issues or problems that could have a material impact in this respect.

[62] By the end of 2017, e-invoicing has been introduced for certain procedures.

DG ENER considers that overall its supervision of the Executive Agencies is effective and appropriate.

c) Nuclear Decommissioning Assistance Programmes

The supervision of the Nuclear Decommissioning Assistance Programmes (NDAP) is based on a multi-layered governance structure, in accordance with the provisions of the NDAP Regulations and on the related Rules of Application. Annual work programmes for the decommissioning programmes are prepared by the Member States and adopted by the Commission by means of implementing acts. These programmes specify the objectives, expected results, related performance indicators and timeline for the use of funds.

The monitoring function is conducted in full cooperation with the Member States. The joint bi-annual programme monitoring committees form the cornerstone of the NDAP supervisory activity. The three Monitoring Committees, co-chaired by the Commission and the Member States at ministerial level, assess the progress in the activities as well as approve the monitoring reports detailing the progress/performance of the programme and taking the appropriate corrective measures when necessary. In 2018 the Monitoring Committees met twice for each country and approved the monitoring reports.

Moreover, the Assembly of Contributors of the International Decommissioning Support funds met two times (in July and in November) and approved the EBRD work programmes for the next period. DG ENER has entrusted the implementation of the NDAP to:

- the European Bank for Reconstruction and Development (EBRD), which implements the assistance through three International Decommissioning Funds (IDSF);
- National Agencies in Lithuania (CPMA) and in the Slovak Republic (SIEA).

In this respect, DG ENER relies on the Framework Administrative Agreement between the EBRD and the Commission, on recent or recently updated pillar assessments for all three implementing bodies, as well as on the provisions of the subsequent agreements with these bodies.

1- Supervision facts

DG ENER maintains strengthened supervisory framework of the NDAP. This supervisory framework includes:

- Improved reporting practices and follow-up;
- monthly management meetings with NDAP staff, DG ENER 01 staff, chaired by the Director of ENER/D;
- A systematic documentation of the preparation, reporting, recording and follow-up of monitoring missions;
- Implementation of a specific, continuous, risk management plan and systematic follow-up of identified risks mitigating actions. DG ENER carries out quarterly risk reviews and on-site visits at least twice a year to verify progress and to re-assess the risks;
- Reliance on updated or recent pillar assessments for all three implementing bodies;

- Use of the earned value management methodology to ensure an effective assessment of the progress of the activities against cost and schedule progress.

In 2018, DG ENER finalised an independent verification of procurement procedures of the Nuclear Decommissioning Assistance Programmes. The opinion of the auditor is that the EBRD has, in all material respects, discharged its responsibilities and obligations with respect to the management and implementation of procurement procedures at each of the three beneficiaries such as to achieve the requisite economy, efficiency, transparency and accountability in all processes as well as uphold the fundamental principles of good procurement practice.

The Commission adopted in June 2018 the mid-term evaluation report of the NDAP in Bulgaria, Slovakia and Lithuania, which considers and assesses the results and impacts, the efficiency of the use of resources and its Union added value. The mid-term evaluation report also puts forward some recommendations for the revision of the detailed implementation procedures.

Payments made to the three entrusted entities totalled EUR 196 million, as further detailed in the subsequent sections.

2- EBRD

The EBRD acts as an implementing body for the Commission for decommissioning nuclear power plants in Lithuania, Bulgaria and Slovakia. The EBRD implements the assistance through three dedicated funds (one for each Member State), so called International Decommissioning Support Funds (IDSF), set up in 2000.

These multi-donor funds are managed by the EBRD and governed through the Assemblies of Contributors (convened twice a year to approve the EBRD work programmes). The Commission is the largest contributor (to date over 95% of all contributions) and the sole contributor since 2004. Accordingly, the funds rules acknowledge the Commission's monitoring power as well as its decision and control role.

The implementing body (EBRD) and the beneficiaries (mainly the nuclear power plant operators) report on progress to the Monitoring Committees. The Member States bear ultimate responsibility for the safe decommissioning of the nuclear power plants.

In 2018, DG ENER paid EUR 93.6 million to the EBRD against commitments made in the previous years in the three countries. Payments are requested by the EBRD and determined based on procurement forecasts — as defined in the relevant delegation agreements — and progress in project implementation. Additional funds entrusted (committed) in 2017 are related to the sole Kozoloduy IDSF and amount to EUR 42,7 million.

A revised delegation agreement for the Kozloduy programme was adopted in October 2018.

The Kozloduy Annual Work Programme 2018 submitted by the Bulgarian Ministry of Energy was assessed by DG ENER and through an Inter-Service Consultation. The programme received the positive opinion of the relevant committee (NDAP Committee) through an examination procedure. The Commission adopted the

financing decision and the associated Kozloduy Annual Work Programme on 8 October 2018[63].

3- CPMA (Lithuania)

The Central Project Management Agency (CPMA) is the only implementation channel for all new projects related to the Ignalina INPP, while the EBRD continues the implementation of on-going projects (i.e started prior to 2014 and to be completed before 2022). The current Delegation expires on 31 December 2026.

The Ignalina Annual Work Programme 2018 submitted by the Lithuanian Ministry of Energy was assessed by DG ENER and through an Inter-Service Consultation. The programme received the positive opinion of the relevant committee (NDAP Committee) through an examination procedure. The Commission adopted the financing decision and the associated Ignalina Annual Work Programme on 8 October 2018[64].

In 2018, DG ENER paid EUR 38.2 million to the CPMA against previous commitments. Payments are requested by CPMA and determined based on procurement forecasts - as defined in the relevant delegation agreement – as well as progress in project implementation. Additional funds entrusted in 2017 (commitments) amounted to EUR 65.6 million.

4- SIEA (Slovakia)

The Slovak Innovation and Energy Agency (SIEA) was initially established by the Ministry of Economy of the Slovak Republic as a professional state subsidy organization, active in the management of structural funds. It was subsequently designated for the implementation of a national channel for the implementation of the Bohunice Decommissioning Assistance Programme.

The Delegation Agreement was signed in August 2016 and will expire on 31 December 2026.

The Bohunice Annual Work Programme 2018 submitted by the Slovak Ministry of Economy was assessed by DG ENER and went through an Inter-Service Consultation. The programme received the positive opinion of the relevant committee (NDAP Committee) through an examination procedure. The Commission adopted the financing decision and the associated Bohunice Annual Work Programme on 8 October 2018[65].

In 2018, DG ENER paid an amount of EUR 64.2 million to SIEA against previous commitments. Payments are requested by SIEA and determined based on procurement forecasts — as defined in the relevant delegation agreement — as well as progress in project implementation. Additional funds entrusted in 2017 (commitments) amounted to EUR 32,8 million.

5- Conclusion on the effectiveness of the supervision

DG ENER considers that in 2018, based on the monitoring reports and the various supervision activities carried out, the three decommissioning programmes met the objectives, in line with the baseline adopted by the Commission on 7 August

[63] Commission Decision C(2018)6451
[64] Ibid.
[65] Ibid.

2014[66].

Supervisory activities proved effective. DG ENER considers that the entrusted bodies were effective and discharged their duties in line with the relevant delegation agreements.

d) EIB - CEF Debt Instrument

DG ENER uses innovative financial instruments for leveraging EU investment and attracting new sources of funding for CEF-Energy projects. The European Investment Bank (EIB) has been entrusted with the implementing tasks concerning the financial instruments (debt) under the Connecting Europe Facility Regulation (EU) 1316/2013.

In 2015 the Delegation Agreement for the Connecting Europe Facility Debt Instrument (CEF DI) was signed by the Commission and the EIB.

Governance and supervision arrangements

The governance and supervision requirements are defined in the Delegation Agreement for the CEF DI, which establishes the working arrangements with the EIB as well as the requirements in terms of financial and technical reporting.

Two joint Steering Committee meetings between DG MOVE, DG ENER, DG CNECT, DG ECFIN and the EIB took place on 13 June and 24 October 2018 where the pipeline of projects, the revision to the CEF DI Delegation, Agreement review of the annual CEF DI risk and financial reports were discussed. Regular contacts take place with the EIB on the state of advancement of specific projects. Such discussion cover in particular projects to support the development of alternative fuel infrastructure and fleet.

DG ECFIN carries out the horizontal task of asset management supervision of the EIB by overseeing the investments made by EIB on the CEF portfolio with regard to investment standards and guidelines set out in the CEF DI Delegation Agreement. DG ECFIN also organises an annual review of the asset management to which DG ENER participates.

As part of the supervision and monitoring activities, DG ENER is involved in regular contacts at working level, coordination meetings and additional exchange of information on the pipeline and the implementation of projects and management of assets entrusted to the EIB.

Managing risk exposure

The facility's treasury portfolio is exposed to credit, liquidity and market risks. The mandate of the EIB includes the management of these risks. Asset management guidelines define the eligibility criteria, the maximum maturity, the interest rate risk and credit risk exposure rules. A quarterly reporting on performance provides the necessary information to the Commission.

During 2018, CEF-Energy received contributions amounting to EUR 89.3 million from DG ENER to underpin the Trans-Anatolian Natural Gas Pipeline Project (TANAP) operation. No significant loss was reported.

The Asset portfolio generated a positive economic result. DG ENER's share in this

[66] C(2014)5449.

economic result, as reported by the audited financial statements, amounted to EUR 0.622 million.

Table 2.10: Economic result of the CEF Debt Instrument

DG ENER share of results in portfolio	2018 (in EUR thousand)
Remuneration received for guarantee given	682
Other operational and financial revenue	-
Fees paid to EIB	-5
Net portfolio income	-57
Realised losses	+2
Economic result	**622**

Source: Audited financial statements. Amounts rounded to the closest thousand.

Assurance received

The EIB provided its financial statements and management declaration on 15 February 2019. The declaration covers the EU funds invested in the current financial instruments and supports the audited statements for 2018. The EIB gave reasonable assurance that:

- the information set out in the Financial Statements was in accordance with the accounting principles and is complete and accurate;
- the funds contributed by or on behalf of the Commission had been used for the intended purposes;
- the EIB had applied a professional degree of care and diligence to the management of the Financial Instruments;
- the control systems and procedures put in place provided reasonable assurance as to the legality and regularity of the related financial operations.

The statutory audit performed on the financial statements concluded that these were prepared in all material aspects in accordance with the applicable rules.

In its final report on the validation of local systems 'Reflows from financial instruments' in which the CEF DI was included, DG BUDG had issued one very important recommendation which related to the necessity for DG ENER to monitor the completeness of the registration reflows[67]. The recommendation was implemented, in cooperation with DG ECFIN.

As a result of the regular reporting provided by the EIB, the management

[67] Revenues generated by the instrument.

declaration and audited financial statements[68] and the regular contacts with the EIB, DG ECFIN and DG BUDG, DG ENER is in a position to have an appropriate overview of the state of implementation of the financial instrument.

Conclusion

DG ENER's supervision of the financial instruments did not identify particular issues that would need to be included in this report. Consequently, DG ENER considers that their supervision is effective and appropriate.

e) ACER – The Agency for the Cooperation of Energy Regulators

DG ENER is the parent DG for the Agency for the Cooperation of Energy Regulators (ACER), whose mission is to complement and coordinate the work of national energy regulators at EU level and work towards the completion of the single EU energy market for electricity and natural gas. In 2011, ACER received additional tasks[69] on wholesale energy market integrity and transparency (REMIT) and in 2013[70] on guidelines for trans-European energy infrastructure.

In 2018, DG ENER's subsidy to ACER amounted to EUR 13.56 million. The execution rate for the financial commitments was 99.26% on 31 December 2018 (98.72% at the end of 2017) and the level of payments execution was 79.73% (75.81% at the end of 2017).

DG ENER, relying on the Agency to achieve its policy objectives, is a member of the Administrative Board, the governing body of ACER, and an observer in the Board of Regulators, deciding on regulatory policy of ACER. Arrangements are in place to ensure that all key proposals to the Administrative Board are properly assessed and the Commission's position agreed.

The monitoring of the Agency's activities includes regular coordination meetings at management level, numerous contacts at working level and reporting. Whenever necessary, bilateral meetings between DG ENER and ACER are organised. In the framework of the supervision by DG ENER of ACER, a set of indicators is used to monitor budgetary and financial execution of the Agency. The Agency provides on quarterly basis information on the budget implementation, the vacancy rate and the audit recommendations follow up.

The "DG ENER strategy on its relations with ACER" was developed in 2018 in line with the recommendation from Secretariat General that Directorates General put in place a guidance document on their relations with decentralised Agencies. The overarching objective is to set up the necessary processes in DG ENER and ACER to ensure an alignment between EU strategic priorities, DG ENER objectives and ACER activities. To this end, the strategy details the monitoring and supervisory activities performed by DG ENER and roles and responsibilities of the various actors as well as identifying risks related to ACER's activities.

The strategy is completed with operational annexes containing:

[68] The amounts mentioned in this section are based on the notes attached to the audited financial statements. However, the share in the economic result booked by DG ENER in its accounts is based on updated figures as received from the EIB in a separate communication and slightly differs from the data presented in Note 16 of the audited 2018 financial statements. This difference is however not material and has no impact on the assurance. Moreover, the consolidated amounts at Commission level were not affected by this error. The updated figures are therefore considered correct and the EIB confirmed that Note 16 will be restated in the Financial Statements of the year 2019.
[69] Regulation (EU) No 1227/2011.
[70] Regulation (EU) No 347/2013.

- List of monitoring and supervisory activities performed by DG ENER and roles and responsibilities of the various actors, and
- Risk table which provides an overview of DG ENER risks resulting from ACER activities.

The Commission provided an opinion on ACER's Work Programme 2019 to ensure consistency of the Agency's action with the European Union's energy goals. As an agreement on the appointment of the new Executive Director of ACER could not be found, a new selection procedure[71] was launched in October 2018.

The Agency is a fully autonomous body and has full responsibility regarding the management of its resources and of its assurance processes. No event is known to have occurred that would impact DG ENER. The situation is monitored through the DG's participation to the Agency's administrative board.

In 2018, the IAS carried out an audit on IT security in ACER. The Final Report has been received in January 2019. Eight important recommendations have been identified (implementation of ACER's overall Information Security Policy, IT Security Governance, Software Development and Change Management, Database Security, Network Infrastructure Security, User Accounts Management, Contractor's Operational Management and Data Encryption).

Earlier, in its audit on Human Resources Management, the IAS had made a critical audit observation concerning the weaknesses noted in the recruitment process and the management of conflict of interest of ACER, which has been since downgraded to the status of very important recommendation. ACER developed an action plan that addresses all recommendations of the IAS report, which the IAS considered as adequate on 8 February 2018. In addition, the IAS will perform a follow-up audit in April 2019 on two out of the five recommendations covering ten actions from the Agency.

The IAS closed its audit on procurement as the action plan was successfully implemented.

ECA found the 2017 annual accounts of ACER legal and regular in all material aspects and that they presented fairly in all material respects the financial position of the Agency. ECA made one observation related to the accounts. ECA also recalled that in October 2017, ACER delegated its accounting function to the Commission's Accounting Officer but the last validation of the accounting system was done 2011. Even though ACER agreed with the finding, the Agency underlined that all its financial transactions are recorded in the financial system provided by the Commission. ECA made other observations, to which the Agency provided replies and justification.

In addition, on 18 April 2018, the European Parliament granted ACER the discharge for the financial year 2016.

In conclusion, the regular supervision of ACER did not identify particular issues that would need to be included in this report. Overall, DG ENER considers that its supervision of ACER is effective and appropriate. The issues evidenced by the IAS audit are adequately addressed by the Agency and duly monitored. DG ENER is therefore in a position to give assurance as to its activities in this respect.

[71] Vacancy notice was published on 15 October 2018.

f) F4E – The European Joint Undertaking for ITER and the Development of Fusion Energy

1- Objectives

Fusion for Energy (F4E) is the European Union's Joint Undertaking for ITER[72] and the Development of Fusion Energy, located in Barcelona. F4E was created in 2007 for a period of 35 years to provide Europe's contribution to the ITER International Fusion Energy Organisation (IO), the world's largest scientific partnership that aims to demonstrate fusion as a viable and sustainable source of energy, bringing together seven parties: the EU, the United States, Japan, South Korea, China, India and Russia.

F4E has the following members:

- Euratom, represented by the European Commission;
- The Member States of Euratom;
- Third countries which have concluded cooperation agreements with Euratom in fusion that associate their respective research programmes with the Euratom programmes and which have expressed their wish to become members.

Europe supports about 45% of the construction cost and 34% of the cost of operation, deactivation and decommissioning of the facility as well as preparing the site. Europe's contribution to ITER is managed by F4E. In 2018, DG ENER paid a total a EUR 659.91 million, corresponding to EUR 609.92 million on the operational budget and EUR 49.99 million on the administrative budget to F4E. The amount to be entrusted over the period 2007-2020 is equivalent to EUR 6.6 billion in 2008 value.

2- Supervision structure

The supervision of F4E activities by DG ENER[73] is organised at different levels.

The top-level decision-making bodies of the Joint Undertaking are the Governing Board (GB) and the Director. The Commission (DG ENER) represents Euratom in the governance and supervision instances, including the Governing Board. All EU Member States and Switzerland are also represented.

The Board is further assisted by:

- The Administration and Management Committee (AMC), preparing the Board's meetings, providing advice or recommendations to the Board or the Director; on specific matters related to the administrative and financial planning of F4E;
- The Bureau: primarily preparing the Board's meetings;
- The Audit Committee: meeting twice a year to provide advice on the oversight of financial reporting and accounting; governance, internal control and risk management; as well as external and internal audits.

DG ENER represents Euratom in the AMC and provides a member of the Audit Committee.

[72] ITER: International Thermonuclear Experimental Reactor.
[73] On 1 July 2015 the responsibility of the monitoring of the ITER project and the Broader Approach activities were transferred from DG RTD to DG ENER.

DG ENER maintains since 2017 a comprehensive supervision strategy for F4E, which sets out the supervision needs, the objectives for the supervision activities, the tools to be used, the working methods and procedures needed to achieve the supervision objectives, and clarifies the scope of application of 'the reservation on legality principle'. The supervision strategy is designed to enable the effective oversight of EU's performance in discharging its obligations to ITER on the basis of F4E's adherence to the agreed schedule (punctual delivery) and required specifications (quality), having regard to sound financial management (cost optimization, budget discipline) according to the Value for Money criteria (economy, efficiency, effectiveness) from the perspective of EU budgetary authorities.

A specific Administrative Agreement between DG ENER and F4E lays down the modalities for the implementation of Euratom's contribution to F4E. In 2018, this agreement was revised and aligned with the new legal framework of F4E and with the DG ENER supervision strategy. The revised agreement was signed by the Commission and by F4E in December 2018.

F4E provides the Commission with planning and reporting documents:

- Planning documents: (i) work programme; (ii) resource estimates plan; (iii) staffing establishment plan; (iv) staff policy plan; (v) project plan; and (vi) the annual budget;
- Regular reports: (i) annual activity report; (ii) progress reports; (iii) an annual independent management assessment of the project's progress; and (iv) monthly reports on budgetary issues impacting the annual budget implementation.

The *ex-ante* oversight of F4E by the Commission mainly consists of the assessment of the planning documents The Commission needs to assure itself that F4E presents a clear vision and strategy to deliver the ITER components under EU responsibility, according to the agreed ITER schedule and within the available budget.

The approved planning provides the basis for *ex-post* monitoring by the Commission of the progress and performance of F4E towards the agreed objectives. This includes the monitoring of procurement arrangements for main components on a regular basis and in particular, when major changes impacting the schedule and the costs occur. In 2018, the GB adopted new KPIs to enable more effective supervision of F4E by its Members, in particular Euratom.

DG ENER is the Euratom representative in the ITER Council, and ensures that F4E is fully associated and consulted when necessary. The ITER International Organization in charge of the project (the ITER Organization – IO) set up by the ITER Agreement is a main stakeholder in the project and thus plays a major role and has a major impact in particular on the activities of the Joint Undertaking but also on Euratom's responsibilities as signatory of the ITER Agreement.

The Commission operates a comprehensive strategy for Euratom's participation in the ITER project's governance and supervision. The main objectives of Euratom's strategy for an effective governance of the project are:

- to foster an effective steering of IO by the ITER Council;
- to ensure the supervision of IO by the ITER Council based on regular information on IO's performance;
- to secure Euratom's interests in the governance of ITER.

Euratom is currently chairing the Financial Audit Board (FAB). The FAB is a board established in accordance with article 17 of the agreement on the establishment of the ITER International Fusion Energy Organisation for the joint implementation of the ITER project to undertake the audit of the annual accounts of the ITER Organisation. The agreement ensures the representation of all participants to the Treaty and the independence of the board. The audits are based on recognised international principles and standards for accounting.

3- Independent assessments requested by the Budgetary Authority

Both the European Parliament and the Council of the EU receive annually an independent assessment on F4E operations and F4E's progress report. DG ENER is a member of the Assessment Steering Committee[74] responsible for the annual F4E independent assessment.

The 2018 external annual assessment was presented to the Governing Board in December 2018.

4- Additional sources of information

The IAS exercises the powers of Internal Auditor of F4E, whilst the internal audit capability of F4E is maintained.

The annual accounts of F4E are subject to the audit by the European Court of Auditors, who since its beginning has given an unqualified opinion on the reliability of the F4E annual accounts and on the legality and regularity of the transactions underlying the accounts. The Court of Auditors' opinion is accompanied by an 'emphasis of matter' related to the EU contribution to the ITER project. This emphasis of matter[75], while drawing attention on challenges related to the schedule and cost base of the project does not constitute a qualification or a limitation to the assurance given.

5- Conclusion

ITER is a unique, first of a kind, large-scale global project. This fact points to unique challenges in the management of the schedule and containment of costs that are linked to the development of yet unavailable material and technologies. Financial uncertainties and risks inevitably derive from these unique challenges.

Whereas the magnitude of the risks pertaining to this project, in particular those affecting its implementation beyond 2020, need to be recognised, DG ENER did not identify — through its regular and reinforced supervision of F4E — any particular events, issues or weaknesses that could have a material impact on the assurance given for the year 2018.

The challenges encountered in the past as regards effective schedule, cost overrun and governance are addressed by F4E's Management and under DG ENER's strengthened supervision, in close coordination with the Governing Board.

Additionally, improvements in terms of management, governance and physical progress have been confirmed by independent reviews at both the level of ITER

[74] The membership of the Assessment Steering Committee for the F4E annual assessment is decided upon by the F4E Governing Board. Current membership is composed of the GB Chair, the Chair of AMC and a representative proposed by Euratom (DG ENER HoU).
[75] See also section 2.1.2.2.d

and F4E.

C) Conclusion as regard legality and regularity of the transactions

DG ENER has set up internal control processes aimed to ensure the adequate management of the risks relating to the legality and regularity of the underlying transactions, taking into account the multiannual character of programmes as well as the nature of the payments concerned.

The AOD's conservative estimation of the amount of *relevant expenditure* during the year not in conformity with the applicable contractual and regulatory provisions at the time of closure (amount at risk at closure) is EUR 4.56 million. This amount is not considered material as regard assurance building.

The assessment on legality and regularity for the directly managed FP7 programme returns a level of detected error which appears to be 'persistently high' over the years in terms of potential financial impact (exposure). Regarding the directly managed EEPR programme, the residual error rate is 0.30%. The amount at risk is not material as regard assurance building.

Regarding the expenditure indirectly managed, there are no indications of any elements that would impair the assurance. The issues observed regarding F4E and ACER do not impact the legality and regularity and appropriate actions are or were taken that allow DG ENER to conclude positively on the assurance it build in respect of these activities.

2.1.1.2.2 Fraud prevention, detection and correction

DG ENER has developed and implemented its own anti-fraud strategy elaborated on the basis of the methodology provided by OLAF. The strategy was last updated in 2017, covering the years 2018-2019.

The controls intended to ensure the legality and regularity of the transactions are complemented by an action plan that is attached to the strategy.

This action plan ensures notably that:

- Internal rules for fraud suspicion handling and reporting are in place;
- A clear assignment of responsibilities for antifraud actions between the units and functions;
- Potential fraud risks are considered within the annual risk assessment exercise for the Management Plan;
- A regular attendance to the Fraud Prevention and Detection network and to the Fraud and Irregularity Committee meetings as well as contacts with other DGs and services;
- The Local Anti-Fraud Correspondent function is operated, in line with the common action plan for the Research family;
- An appropriate level of cooperation is ensured with OLAF.

Its implementation is being monitored regularly and reported twice a year to the management. All actions for 2018 have been implemented except for the actions that were intended to accompany the introduction of the revised Commission

Antifraud Strategy (CAFS II) that is now expected to occur in 2019. The indicators show that the strategy is an effective tool to prevent and detect fraud.

Further efforts regarding staff awareness remain necessary as a continuous effort. In 2017-2018, the initiatives focussed on targeted meetings, vulnerability assessment workshops complemented by lunchtime conference in both Brussels and Luxembourg. Fraud prevention was also regularly discussed in the internal control newsletter. An information package was available on a dedicated intranet page.

In the course of 2018, DG ENER sent one new case to OLAF for investigation. As of 31 December 2018, there were two open cases.

In addition, the tables below show the state of implementation of the anti-fraud indicators and outputs indicated in the Strategic Plan for 2016-2020 and the Management Plan 2018.

Table 2.11: State of implementation of the Anti-fraud indicators mentioned in the Strategic Plan 2016-2020

Objective: Minimisation of the risk of fraud through application of effective anti-fraud measures, integrated in all activities of the DG, based on the DG's anti-fraud strategy (AFS) aimed at the prevention, detection and reparation of fraud.			
Indicator 1: Updated anti-fraud strategy of DG ENER, elaborated on the basis of the methodology provided by OLAF **Source of data: OLAF guidelines – DG AFS**			
Baseline	Interim Milestone 2017	Target	Latest known results
Date of the last update: October 2015	AFS Updated by December 2017 and December 2019	Update every two years, or if there are major changes.	Updated in November 2017. Next update expected in 2019.
Indicator 2 : Regular monitoring of the implementation of the anti-fraud strategy and reporting on its result to management **Source of data: Bi-annual Report to the Commissioner**			
Last update of the anti-fraud strategy – October 2015	Interim reviews twice a year, starting in the first half of 2016.	Review of the state of implementation twice a year and report of the result in the bi-annual report to the Commissioner.	The state of implementation was reviewed twice in 2018 and reported as per target.

Table 2.12: State of implementation of the Anti-fraud outputs mentioned in the Management Plan 2018

Objective: Minimisation of the risk of fraud through application of effective anti-fraud measures, integrated in all activities of the DG, based on the DG's anti-fraud strategy (AFS) aimed at the prevention, detection and reparation of fraud.			
Main outputs in 2018:			
Output	Indicator	Target	Latest known situation
Implementation of the anti-fraud strategy as planned for 2018-2019	% of implementation of actions planned for 2018 in the anti-fraud strategy	100% of the 2018 specific actions implemented by 31.12.2018	100% of the actions, except for the actions related to the introduction of CAFS II, initially expected in 2018 and postponed to 2019.
Monitoring of the effectiveness of the anti-fraud strategy for 2018-2019	Mid-term review of the AFS	Before 31.12.2018	Related to the introduction of CAFS II, initially expected in 2018 and postponed to 2019.
Reporting to Management	Number of reports on the implementation of the anti-fraud strategy	At least twice a year	Two

2.1.1.2.3 Other control objectives

A) Safeguarding of assets and information

This control objectives are related to the management of assets and information in the framework of the 'Euratom Safeguards' activity and to the assurance to give with regard to specific off-balance sheet items. The nuclear material control system, known as '**Euratom Safeguards**', is based on two pillars:

- The record-keeping and reporting obligations of nuclear operators[76], as well as the periodic reports and accountancy declarations to be made to the Commission;
- The verification of the completeness, correctness and coherence of these reports and the effectiveness of the operators' accounting systems.

This activity entails the management of a certain number of **tangible and intangible assets** (such as, for instance, detection and measurement systems, office laboratory equipment, specific IT hardware and in house developed software), and the management of secured or classified information. DG ENER is asset management centre for all specific assets purchased with its budget. The number of items with an acquisition value of more than EUR 5 000 is at the end of 2018, compared to end of 2017, detailed in the table below.

[76] Art. 78 & 79 of the Treaty, further regulated by Commission Regulation (Euratom) 302/2005 which defines requirements for the nuclear material accountancy system to be implemented by the nuclear operators.

Table 2.13: Asset Management (Nuclear Safeguards) – Number of items with an acquisition value of more than EUR 5 000

Type of Asset	2018	2017
Computer hardware and purchased software	127	240
Furniture, equipment and other items	1 907	2 035
Total	**2 034**	**2 275**

The key control objectives for DG ENER are to ensure that these assets are appropriately accounted for and safeguarded, that information is protected, and that related weaknesses, errors, irregularities and losses are detected and addressed.

To be recognised as an asset, an item needs to comply with following criteria:

- Acquisition value above EUR 5 000;
- Lifespan of more than one year.

The net value of intangible assets under management (exclusively in-house developed software) decreased from EUR 2.48 million in 2017 to EUR 1.37 million in 2018. The decrease in value corresponds to the depreciation of the assets.

The tangible assets under management by DG ENER were, as of 31 December 2018, stable compared to the previous year, at EUR 5.79 million as detailed in the table hereafter.

Table 2.14: Tangible assets under management by DG ENER

	Number of items	Purchase value EUR million	Amortisation EUR million	Net value EUR million
Computer hardware and purchased software	127	1.14	0.93	0.21
Furniture and equipment	1 907	31.14	25.56	5.58
Total	**2 034**	**32.28**	**26.49**	**5.79**

No impairment was made in respect of any of the assets under management.

The asset-related controls in place include:

- The performance of specific technical and contractual checks upon receipt of the goods;
- Periodical physical inventories: in 2018, two major actions were performed. A full inventory was performed for the Luxembourg premises where most of DG ENER's assets are located (60.7% of the items and 84.8% of the net value), Physical inventories were performed in some nuclear facilities in the UK in preparation of the Brexit;
- For assets for which the normal physical tracking is limited due to their

nature or their accessibility (e.g. cameras and accessories in a nuclear power station which are located too high or the tracker cannot get in a specific zone), the update is done, with a manual register during each inventory visit.

Regarding **safeguarding of information**, DG ENER handles secured and classified information in accordance with the provisions of Commission's Decision 2017/46 and Security Notices number 1 and 2. A specific, separate infrastructure and a secure software environment are in place to ensure full compliance with these requirements.

In the specific Euratom document management system (MEDOR), in 2018, 20.982 documents have been created of which 98.30% are classified as 'EURA restricted' (for 2017, the data is 20 071 documents created of which 98.82% 'EURA restricted').

DG ENER's current procedures and controls are considered as robust and effective.

The **off balance sheet items** translate the involvement of DG ENER into the CEF debt instruments and into the follow up of specific legal issues.

The management of debt instrument was delegated to the EIB. The off balance sheet postings include contingent liabilities that correspond to the guarantees given by the EU for these financial instruments. In 2018, these guarantees increased at EUR 98.57 million (2017: EUR 9.28 million), in line with the increase of DG ENER's involvement in the debt instrument.

Furthermore, contingent liabilities were recorded for an amount of EUR 6.50 million. These contingent liabilities cover the potential losses that could arise from two legal cases related to INEA management of CEF-Energy projects.

The off balance sheet postings also include an amount of EUR 2,484.20 million (compared to EUR 3,193.99 million in 2017), corresponding to the commitments made against appropriations not yet consumed.

B) Reliability of reporting

DG ENER implements a significant part of its budget through indirect management. It therefore relies on the reports and accounts provided by the relevant implementing bodies. DG ENER considers, as a whole, that the reports received from these bodies are reliable and sufficient to draw assurance conclusions.

This section presents more in detail DG ENER's assessment as to the reliability of reporting of the F4E Joint Undertaking, implementing the Euratom obligations towards the ITER project and of the EBRD, CPMA and SIEA, implementing the Nuclear Decommissioning Programmes.

a) For the ITER programme: the Fusion for Energy Joint Undertaking (F4E)

In 2018, F4E received the discharge for its 2016 accounts and operations from the Budgetary Authority. The European Court of auditors issued an unqualified opinion both on the legality and regularity of its operations and on its accounts for the year 2017.

Statutory information received from the implementing body includes their AAR, the annual progress report for the European Parliament and the Council and their annual report to the Governing Board.

In addition, F4E provides monthly reports on its activity and related milestones. Requests for appropriations and calls for funds are supported by financial reports.

This information was sufficient for drawing assurance conclusions and considered reliable. The Commission and the Governing Board however identified the need to further improve the reporting, to ensure more effective participation of the Commission in the governance of F4E and of ITER Organisation and to allow in the future for a better monitoring of the implementation of the new baseline that results from the project turnaround.

b) For the Nuclear Decommissioning Assistance Programme (NDAP)

The implementation of the NDAP was entrusted to three implementing bodies[77]. Being at the centre of the supervisory activity, the three joint EU-Member States Monitoring Committees generate a jointly reporting on the programmes developments.

The EBRD-managed multi-donor funds have a specific governance structure. Management information received includes, bi-annual work programmes, periodic financial reporting on the three funds under management and project documentation.

The Central Project Management Agency[78] and the Slovak Innovation and Energy Agency national agencies provide annually a summary report on the financial implementation of the entrusted tasks, together with their accounts on the expenditure incurred in the implementation of those tasks, and information on any audits, controls that were carried out. Management information received include financial reporting, project documentation and management reports on procedural issues.

The implementing bodies provide declarations of assurance together with their financial reports. The technical reports were subject to an assessment by DG ENER services.

This information was sufficient for drawing assurance conclusions and is considered reliable.

c) For EIB – CEF debt instrument

Statutory information received during the reporting period includes the annual reports and the financial statements for the financial year 2018. The management information received from this body is considered as sufficient and reliable. Assurance in this respect is drawn from the declaration of assurance that accompanies these documents and from the independent audit report that covers them.

DG ENER received the EIB annual reports, declaration of assurance and the financial statements in February 2018 for the financial year 2017 as defined in the CEF Debt Delegation Agreement. The audit report did not include any major

[77] EBRD, CPMA and SIEA, see section 2.1.2.2.C
[78] Lithuania.

observation. One control weakness was identified regarding the publication of contracting information prior to the actual signature of the contract. This occurrence is not considered as having any material impact on the assurance as the contract was subsequently effectively signed.

2.1.1.3 Efficiency

Based on an assessment of the most relevant key indicators and control results, DG ENER has assessed the efficiency of the control system and reached a positive conclusion.

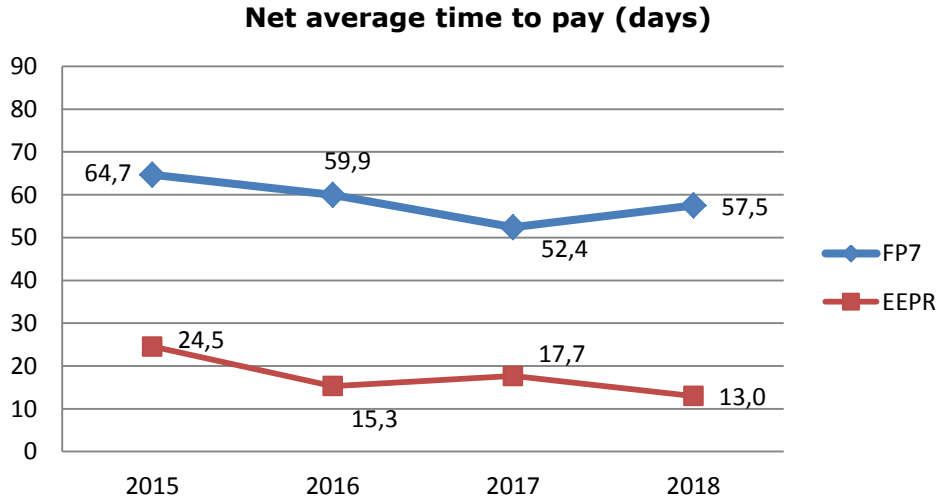
A) Direct Management

For the year 2018, the following efficiency indicators have been estimated, for the programmes reported in section 2.1.1.2.1. (A), related to the ex-ante controls (FP7 and EEPR) and the ex-post audits (EEPR, as the FP7 ex-post audits are managed by the Common Audit Service in DG RTD)[79].

- **Time-to-Pay**

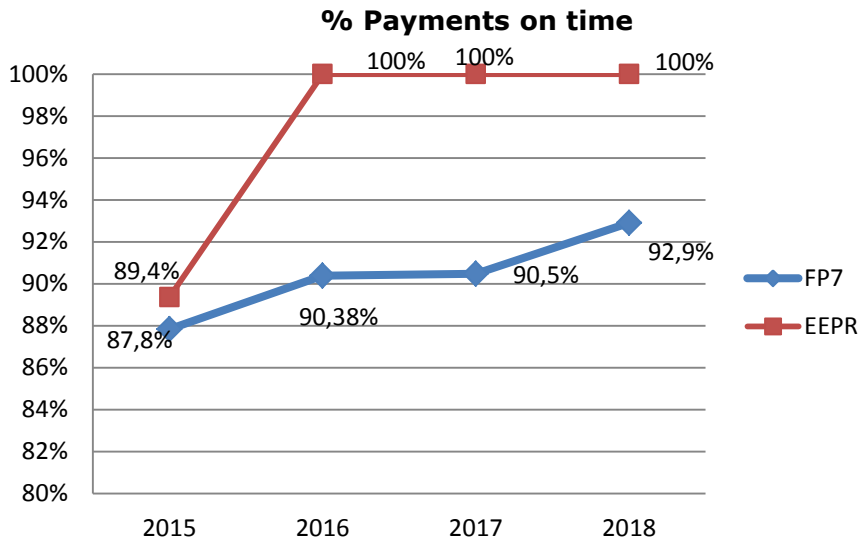
The evolution over time of this efficiency indicator is outlined in the charts below for FP7 (time limit of 90 days) and EEPR (legal time limit of 45 days):

Net average time to pay (days):



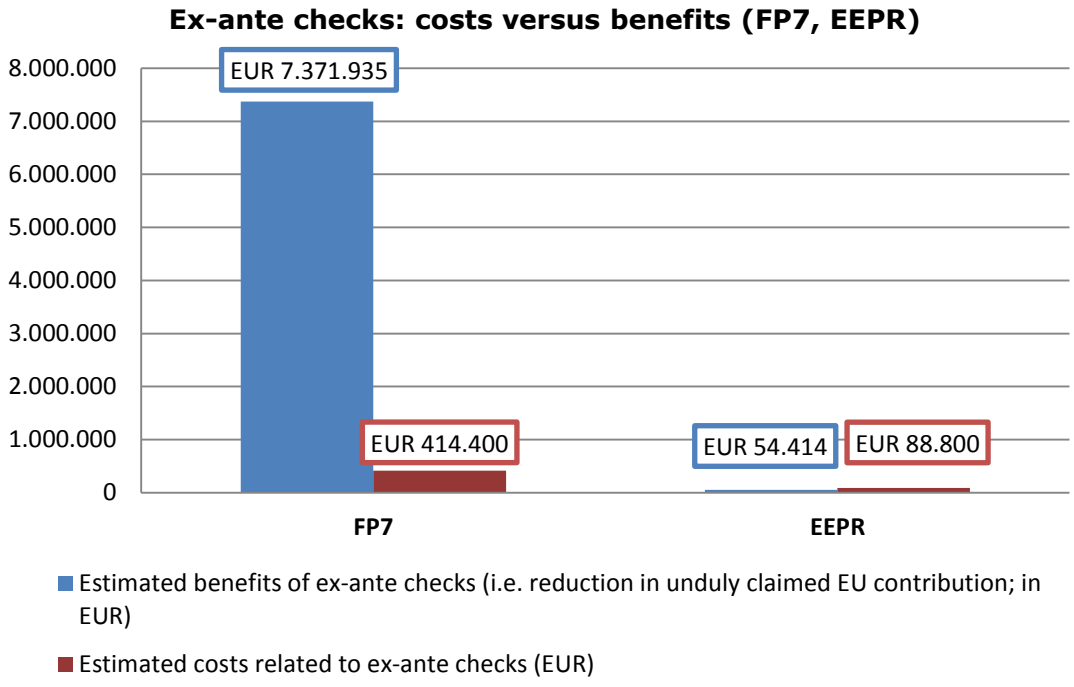
For 2018, the payments deadlines for these two programmes were well below the deadlines, notably owed to the fact that there was no shortage of payment appropriations.

[79] The indicators time-to-grant and time-to-inform are not applicable to the legacy programmes.

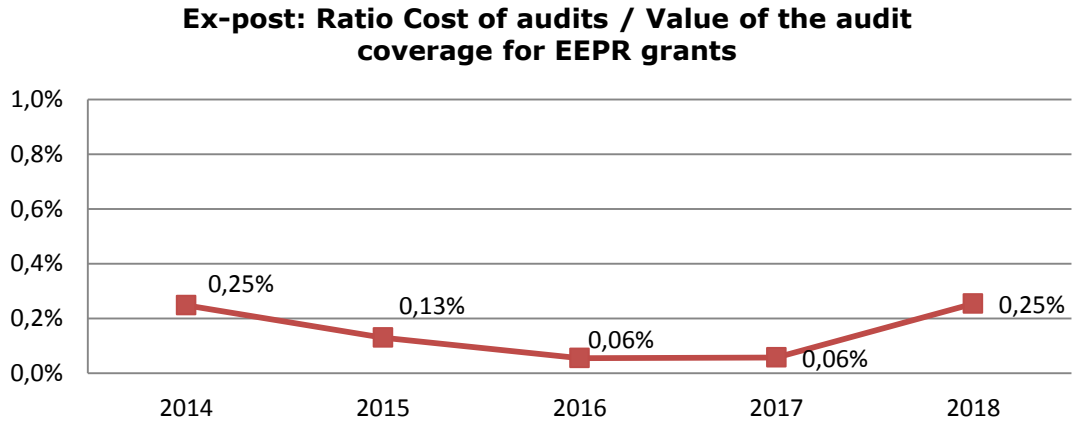


- **Estimated costs compared to estimated quantifiable benefits**

As for the bar chart hereunder, it underlines the estimated efficiency of the ex-ante verification performed for EEPR and FP7 in 2018.



The excellent efficiency indicator of carrying out audits for **EEPR** is emphasised in the following chart, which shows that the estimation ratio of cost of audits (EUR 0.25 million) over the value of the audit cover rate for EEPR grants maintained its low levels as compared to the previous years:



Concerning FP7, the audits are performed by DG RTD's Common Support Centre. for all DGs and services involved in these programmes, as the cost are mutualised[80], comparing the cost of the audits carried out by RT against the total amount of expenditure under the programme. The cost of control indicator is stablished The total cost of ex-post audits for FP7 amount to 0.12% of the expenditure as can be seen from the table below provided by the Common Audit Service

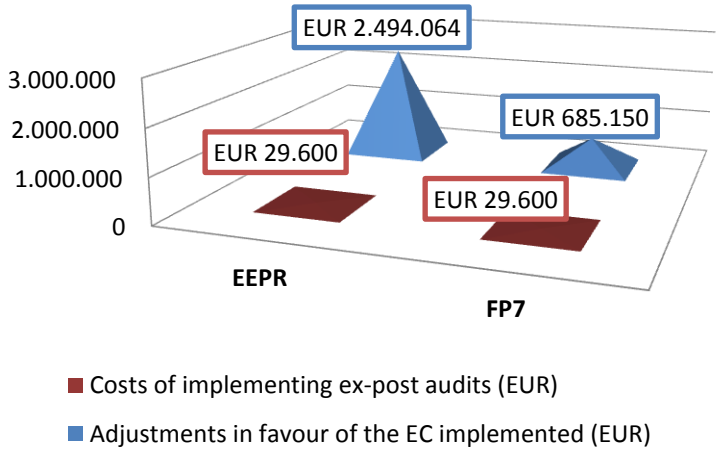
Table 2.15 Mutualised cost of control: Ex-post audits performed by the Common Support center

Effectiveness indicator in direct grant management	Costs (EUR million)			Overall rate (total costs / total amount paid)
Common Support Center	Internal costs	External costs	**Total**	**%**
Ex post audits performed by the CSC for the R&I Family of DGs	7.3	2.8	**11.1**	**0.12%**

In addition, the chart below clearly outlines that the costs for implementing the audits in EEPR and FP7 are inferior to the adjustments recovered for these programmes.

[80] It is therefore not possible to derive a 'DG ENER' specific cost of CAS services.

Ex-post: Implementation of ex-post audits (EEPR, FP7)



B) Indirect management

a) Nuclear Decommissioning Assistance programmes

In line with expectations set for the current MFF, Bulgaria, Slovakia and Lithuania have progressed effectively and efficiently in the decommissioning of their reactors; there have been challenges and setbacks in the past due to the programmes' complexity, but the management system has proven increasing ability to cope with them. Key milestones were met in 2018, following the positive trends from previous years. Given the progress and the new momentum of decommissioning activities, substantial additional payment credits (some EUR 44 million) were requested to the budgetary authority for the whole NDAP on top of the available EUR 152 million.

All supervisory activities were carried out as planned and within the framework of the existing control strategy. The key benefits of these controls are to foster a constant attention on the delivery on schedule and on cost, and on the early mitigation of issues encountered.

Knowledge sharing between the three programmes has been a key instrument towards efficiency during the current MFF. DG ENER has continually encouraged stakeholders to share good practices. Synergies are currently pursued, in particular between Slovakia and Bulgaria due to the similarity of their plants (VVER type).

The general efficiency indicators are favourable: the execution of commitment and payment appropriations related to the settlement of dues to the implementing bodies reached 100%. The time to pay for the settlement of the eight payments towards the EBRD, CPMA and SIEA were respectively of 13, 31 and 16 days.

However, given the specificity of these instruments and the long-term approach of the underlying activity, the overall efficiency of this programme is above all measured through the value earned methodology.

Implementation through the EBRD

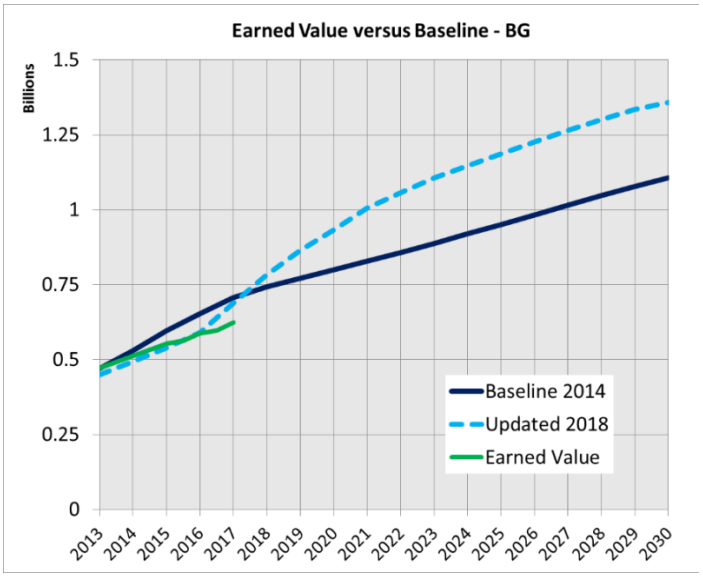
Kozloduy fund

The Kozloduy programme made significant progress in the dismantling of equipment in the turbine hall and in the controlled area.

A size reduction and decontamination workshop is in operation since March 2018. The Plasma Melting Facility became operational in November 2018. The construction of the National Disposal Facility is advancing.

As reported in the mid-term evaluation, the budget estimate at completion of the Kozloduy programme has been revised upwards (+23%) based on a due periodical re-assessment of the decommissioning plan. Correspondingly, Bulgaria has increased national contributions.

In terms or earned value management, the programme remains on track as illustrated below.



Ignalina and Bohunice funds

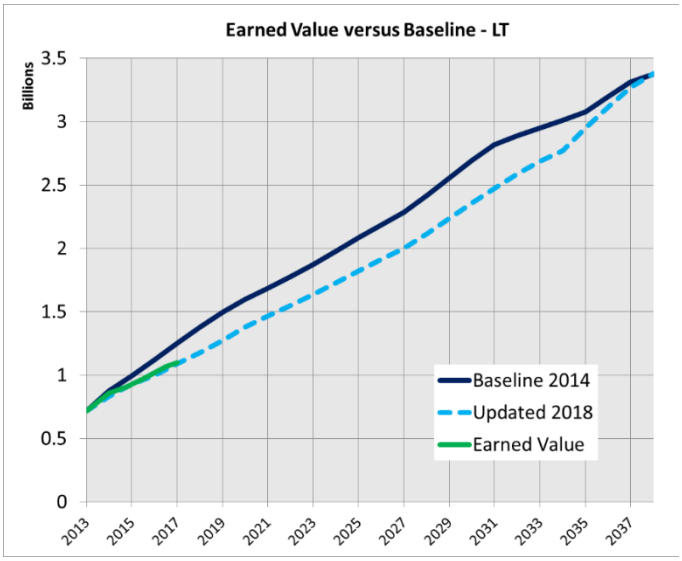
The Ignalina IDSF are winding down as the last major projects are close to completion. The continuation of the programme is ensured through the CPMA.

The Bohunice IDSF is co-existing with the management of newer projects through the SIEA.

Implementation through the Central Project Management Agency (CPMA) Lithuania

The CPMA is the only implementation channel for all new projects related to the Ignalina INPP.

Although delays have been incurred in the implementation of the programme, as shown below, they have not affected the critical path at this point in time, and the end date of the programme (2038) is maintained.



The Ignalina programme (LT) is a first of a kind challenge, given the reactor, a Chernobyl type reactor characterised by a large graphite core. Decontamination & Dismantling (D&D) works are well advanced in the auxiliary buildings at the Ignalina site. The second reactor was defueled fully in February 2018, i.e. 9 months earlier than planned. Both reactors are defueled. As of 30 November 2018, 48% of spent fuel assemblies were put into storage.

Decontamination and Dismantling in the turbine halls and auxiliary buildings progressed well. Works have started for the construction of the Landfill Facility for Short-Lived Very Low Level Waste.

The programme is generally on track to accomplish the Regulation's specific objectives for 2020 with the funding provided in this MFF. A clear trend towards increased efficiency was observed throughout the monitoring activities as confirmed by independent experts.

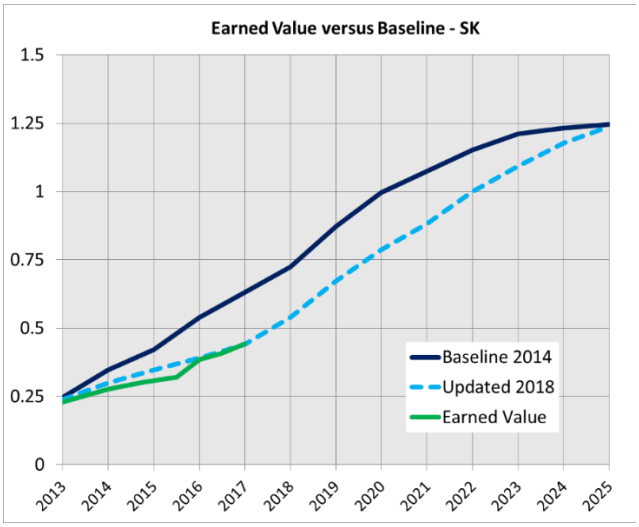
Specific risks are monitored constantly and mitigated when possible in line with the established internal procedures.

Implementation through the Slovak Innovation and Energy Agency (SIEA), Slovakia

The SIEA started to operate as national channel for the implementation of the Bohunice Decommissioning Assistance Programme in 2016.

The Bohunice programme has reached a high level of maturity: the estimate at completion is supported by a state-of-the-art plan for risks and contingencies, which enables assigning a level of confidence to the estimations.

Decontamination and Dismantling works in the turbine halls and auxiliary buildings were finalised in 2018 with the demolition of the four V1 NPP cooling towers, hence the first specific objective set out in Council Regulation 2013/1368/Euratom was accomplished effectively and efficiently in 2018. The decontamination of the spent fuel pools and other tanks in the controlled area was finalised, while the dismantling of large components of the reactor coolant systems started. The activities are on track so that the initial end-date (2025) is confirmed.



Conclusion on the efficiency of supervision

DG ENER considers that in 2018, based on the monitoring reports and the various supervision activities carried out, the three decommissioning programmes met the objectives, in line with the baseline adopted by the Commission on 7 August 2014[81].

The Earned Value Management indicators showed that performance was generally appropriate. DG ENER considers that the entrusted bodies were effective and efficient and discharged their duties in line with the relevant delegation agreements.

The main cost drivers as regards the supervisory controls for the NDAP are:

- the complexity and specificity of the underlying operations;
- the complexity of the implementation scheme, where implementation occurs both through EBRD operated multi-donor funds and national agencies, leading to a multi-layered governance framework;
- the retention by the Commission of a strong role as regards the approval of project documentation and the decisions on the eligibility of projects.

Finally, DG ENER found the quality of the management information reported in 2018 sufficient for concluding on assurance.

b) The Euratom contribution to the ITER programme and the supervision of F4E

All supervisory activities were carried out as planned and within the framework of the existing control strategy. The key benefits of these controls are to foster a constant attention on the delivery on schedule and on cost, and on the early mitigation of issues encountered.

[81] C(2014)5449.

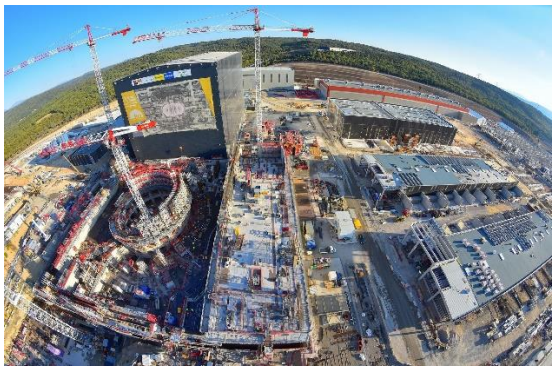
A continuous risk assessment system, based on quarterly reviews of the project and organisational risks is maintained. This system improves the reactiveness to potential issues and contributes to the efficiency of supervisory activities.

The general efficiency indicators are favourable: the execution of commitment and payment appropriations related to the settlement of dues to the Joint Undertaking reached 100%. The time to pay for the 5 payments made to F4E averaged 11 days.

Progress of the ITER project

Since its start in 2007, the ITER project, being a technologically complex, first-of-a-kind large-scale international project, has accumulated important delays and cost overruns. These issues have been addressed by an overhaul of the project's management and governance, including a revised baseline built on updated schedule and cost estimates.

Box 2.1: Progress of the ITER project (Cadarache, France, source ITER IO)



November 2017

December 2018

The revised baseline and cost base confirm that there will be no additional funding needed for ITER under the current MFF and that the capped budget until 2020 set by the Council of the EU in 2010 will be respected (EUR 6.6 billion for the construction phase until 2020 in 2008 values). The recent developments on ITER and the revised schedule mean however that a budget increase beyond 2020 is inevitable. The budgetary allocation for the EU to comply with the new schedule beyond 2020 will be decided by the EU Budgetary Authority in the context of the discussions on the next Multiannual Financial Frameworks.

The project was in effect put back on its tracks, and this translated into a significant acceleration in the implementation of contracts for European contributions through F4E. The execution rates for commitment and payment appropriations for 2018 was well above 95%.

Conclusion on the effciency of supervision

Based on the monitoring reports and the various supervision activities carried out, DG ENER considers that F4E was effective and efficient and discharged their duties in line with its obligations. The supervisory controls towards F4E and the administration of the Euratom contribution were efficient and delivered the expected results.

The main cost drivers as regards the supervisory controls for F4E are:

- The complexity and specificity of the underlying operations, being in effect a one-of-its kind project.
- The magnitude of the budget implication of this project.
- The complexity of the implementation schemes of both the ITER project and the broader approach
- The need for the Commission to commit to a strong leadership in the governance scheme of International Organisation (IO) and of Fusion For Energy (F4E).

Finally, DG ENER found the quality of the management information reported in 2018 sufficient for concluding on assurance.

2.1.1.4 Economy

DG ENER performed an assessment of its costs of control in accordance with the current guidance[82]. The corporate methodology for the estimation, assessment and reporting on the cost-effectiveness of controls was revisited in September 2018 and applied for the first time into the 2018 annual reporting. The difference of the estimated cost of controls as compared to previous years derives from this new methodology[83] and does not reflect any material change in DG ENER control strategy.

The assessment made included the identification of control functions, the quantification of their costs and the assessment of their cost effectiveness.

The outline of the cost assessment is presented below per management mode and per relevant control system, whereas its conclusions are presented under section 2.1.1.5 "Conclusion on the cost-effectiveness of controls".

A) Direct management

The cost of control associated to the reported upon directly managed expenditure takes into account the Commission level costs to manage financially the expenditure and the relevant programmes (covering the staff working time allocated to these tasks)[84] and can be summarised as follows:

[82] Guidance on the estimation, assessment and reporting on the cost-effectiveness of controls, Ares(2018)4917637, dated 25 September 2018.
[83] In particular, the new methodology considers some cost of controls (f.i. organisational controls) previously not taken into account in the overall cost of control indicator and ensures a more comprehensive coverage of programme management controls.
[84] The costs reported or used in the rations include overheads.

Table 2.16: Summary of the cost of control for directly managed grants

	Directly Managed grants (FP7)	Directly Managed grants (EEPR)
Payments made in 2018	EUR 39.29 million	EUR 159.10 million
Cost/funds ratio for ex-ante controls (Cost/payments of 2018)	1.62% (EUR 0.64 million)	0.20% (EUR 0.31 million)
Cost/funds ratio for ex-post controls (Cost/payments of 2018)	0.79% (EUR 0.31 million)	0.21% (EUR 0.33 million)
Cost of mutualised audits by the CAS	0.12%[85]	NA
Total Cost/funds ratio	2.53%	0.4%

The controls related to grants in direct management remain relatively economical. The relative cost of FP7 went down from 4.98% in 2017 to 2.53% in 2018, whereas the ratio for the EEPR remained at the same level (i.e. 0.4%).

These costs relate however to phasing out legacy programmes. The expenditure in 2018 was still significant but is expected to decrease faster than the cost of controls themselves towards the end of the MFF. There is in this case no need to adjust the control strategy, as the possibility to achieve synergies has been explored already (recentralisation of FP7 and H2020 audits, introduction of paperless workflows), whereas the level of control has to remain sufficient to mitigate the risk of errors inherent to the cost reimbursement model applicable to these programmes.

B) Indirect management and budgetary support

The cost of control associated with the reported upon indirectly managed expenditure includes the costs of managing the programmes and the financial flows as well as supervising the different entities. As such these costs include the staff working time allocated to these tasks and the specific contracts directly related to supervisory tasks when relevant, and can be summarised as follows:

Table 2.17: Summary of the cost of control per management mode and instruments

	Indirect Management – F4E & ITER	Indirect Management – NDAP (EBRD, SIEA & CPMA)	ACER
Payments made in 2018	EUR 659.91 million	EUR 195.98 million	EUR 13.56 million

[85] Sources: DG RTD.

Cost/funds ratio for ex-ante controls (Cost/payments of 2018)	0.28% (EUR 1.83 million)	2.28%[86] of which 0.12% (EUR 0.23 million) are DG ENER direct costs	1.31% (EUR 0.18 million)
Cost/funds ratio for ex-post controls (Cost/payments of 2018)	0.06% (EUR 0.41 million)	0.23% (EUR 0.46 million)	0.65% (EUR 0.09 million)
Total cost/funds ratio	0.34%	2.51%/0.35%	1.96%

The apparent increase of the cost of control expressed in percentage from a year to the other for both the supervision of ITER and the NDAP is due to the lower relevant expenditure for the year or to the change in calculation methodology. In absolute terms, the cost of control for the supervision of F4E and ITER increased from 1.99 to 2.24 EUR million, while the cost of control for the NDAP remained stable at EUR 0.68 million.

In addition to this, 2018 was the first year of operation for the revised control strategies for the supervision of ITER and for F4E. This mainly results are in a shift of control costs from ex-ante to ex-post control. Considering the added benefits of these controls in terms of governance, the indicator remains very favourable.

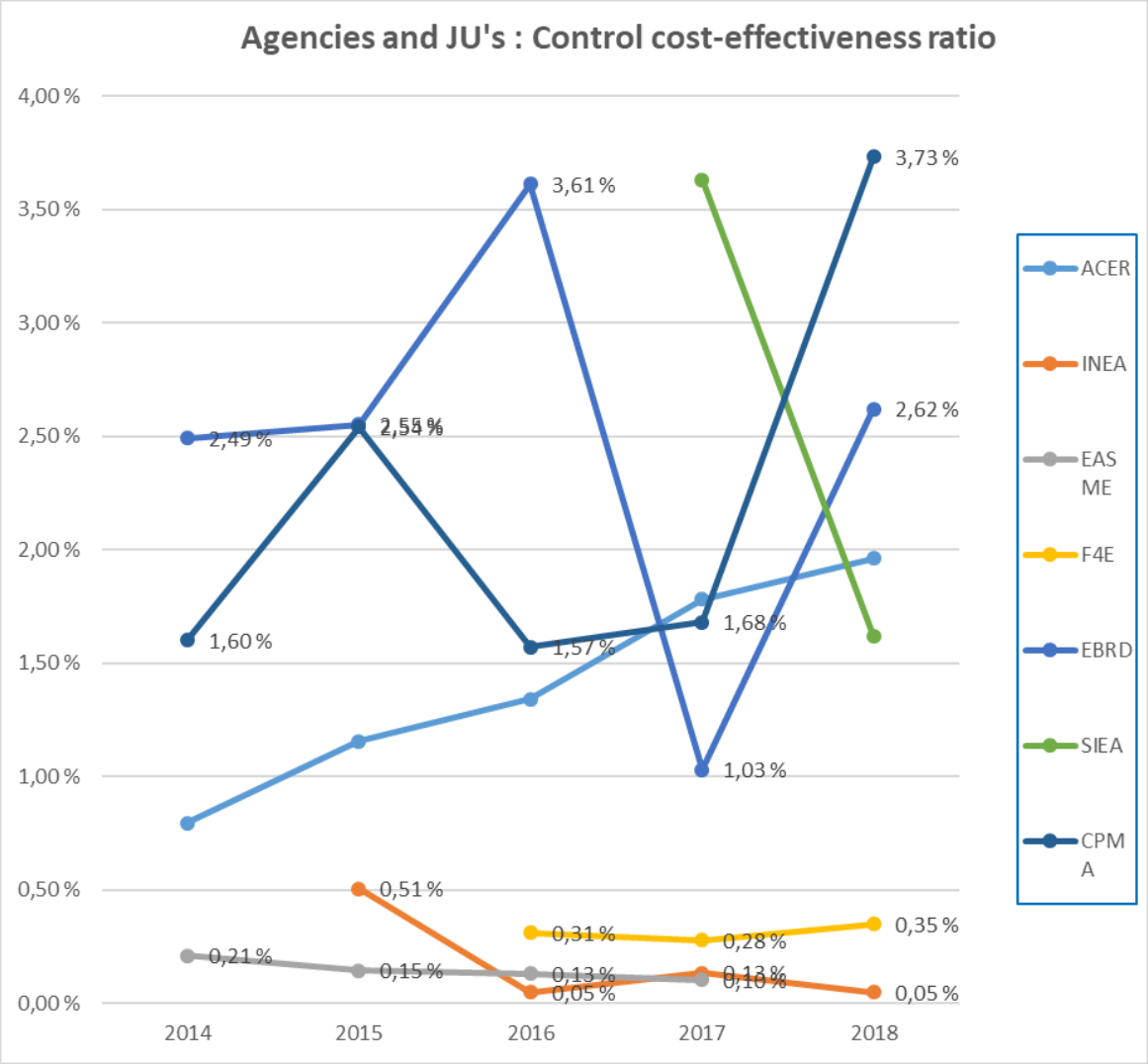
The cost of controls reported for the NDAP include the fees paid to the entrusted entities and can be considered as moderate. The Costs at Commission level are in line with other programme. The key cost drivers are the complexity and specificity of this action, the retention of a strong role by the Commission and the fact that the fees are set as a percentage of the action value. These costs remain overall stable and it is not possible to achieve further economies of scale.

The control cost for the supervision of ACER increase slightly the consequence of the introduction by DG ENER of a supervision strategy for the parent EU bodies. The increase is however not substantial.

C) Cost of control at DG and entrusted entities level

The cost of control for entrusted entities includes both the cost exposed by the Commission and the cost exposed by the entity itself for the management of the entrusted tasks. The cost at entity level is measured through the fees paid to the entities or, for the Joint Undertakings, through the calculation of the effective cost of control resources, using a methodology similar to that used for Commission services. EU bodies and Executive agencies have a full responsibility for the operation of the control systems and report separately on their activities. As shown in the chart below, the indicators related to supervisory controls carried out in 2018 by DG ENER services over the entrusted entities remains relatively low, showing that the supervisory controls were cost effective.

[86] Including the remuneration paid to the implementing bodies as set in the delegation agreements.



The following tables summarise the cost of control respectively at DG ENER (2.18) and at entities (2.19) level.

Table 2.18: Cost of control at DG ENER level

Entity	Cost of Control at Commission level	Comments
EBRD	EUR 0.36 million (+ fees paid EUR 2.09 million)	Controlled amount: EUR 93.57 million
CPMA	EUR 0.16 million (+ fees paid EUR 1.26 million)	Controlled amount: EUR 38.23 million
SIEA	EUR 0.16 million (+ fees paid EUR 0.88 million)	Controlled amount: EUR 64.18 million
INEA	EUR 0.19 million	Controlled amount: The related to CEF Energy expenditure managed by INEA under Direct Management in 2018 amounted to EUR 365 million.

EASME	EUR 0.15 million	Controlled amount: The Energy expenditure managed by EASME under Direct Management in 2018 amounted to EUR 98.32 million.
ACER	EUR 0.27 million	Controlled amount: subsidy of EUR 13.56 million.
F4E	EUR 2.24 million	Controlled amount: Administrative budget of EUR 49.99 million, and operational budget of EUR 609.92 million.

Source: estimate of staff cost associated with the different control stages, including overheads.

Table 2.19: Cost of control at entity level

Entity	Cost of control	Comment
EBRD	EUR 2.09 million	Aggregated budgeted amount of the fees to pay for the IISDF, KISDF, BISDF (source: EBRD)
CPMA	EUR 1.26 million	Remuneration for 2018 (source: ABAC)
SIEA	EUR 0.88 million	Remuneration for 2018 (source: ABAC)
EIB	EUR 5 000	Aggregated amount of the fees paid for the management of the CEF Debt instrument. (source: Audited Financial Statements)
F4E	EUR 41.28 million	Joint Undertaking under Article 70 of the Financial Regulation. The JU is responsible for the setup of its control systems within this envelope and for reporting on them in its own annual report. (source: F4E "Cost of Controls 2018" 31.1.19). The total cost of control was estimated at EUR 41.28 million, of which EUR 38.49 million correspond to JU's staff costs (365 FTE) and EUR 2.79 million to contracts with specialised audit, quality inspection and nuclear inspection services.
INEA	EUR 3.06 million	The share[87] of the cost of control of the Executive Agency related to ENERGY activities is estimated at EUR 3.06 million. These cost cover both the execution of the administrative budget and the operational budget of the Agency. (source: INEA Draft AAR)

[87] This estimate is based on INEA's calculated COC per programme and reflects the 3.3% share of Energy projects in the CEF programme, and the 51% share of Energy projects in the part of H2020 managed by INEA.

EASME	EUR 2.96 million	The share[88] of the cost of control of the Executive Agency related to ENERGY activities is estimated at EUR 2.96 million. These cost cover both the execution of the administrative budget and the operational budget of the Agency. (source: EASME Draft AAR)

As to the EIB, the ratio used to measure the cost effectiveness of the CEF Energy debt instruments is representative of the substance of the delegation that consists in a portfolio management activity over a multi-annual framework. This indicator is measured as the cost of supervision plus fees against total assets under management as of 31 December of the reporting year.

The use of financial instruments under indirect Management in DG ENER increased in 2018. The net asset value of DG ENER's participation to the CEF debt instrument was, as of 31 December 2018 of EUR 99.48 million against EUR 9.93 million in 2017. This increase is due to a contribution of EUR 89.3 million made to support a single project. No performance or treasury fees were accounted, and the management fees were limited.

Table 2.20: Control cost indicator – CEF Debt Instrument

Control cost indicator – supervision of the CEF Debt Instruments (EIB) (in EUR million)	2017	2018
Sum of all fees paid to the bank (treasury, administrative and performance fees) (*)	0	0.005
Cost of control by DG ENER services	0.03	0.14
Total Supervision costs by DG ENER	0.03	0.145
Amount delegated in the course of the year	0	89.30
Amount under management (*)	9.93	99.48
Cost effectiveness Ratio	**0.3%**	**0.15%**

Source: (*) Audited Financial Statements for the CEF Debt Instrument, EIB.

The supervision costs against assets under management (taking into account Commission supervision and fees paid) remained stable at 0.95 FTE or EUR 0.14 million.

D) Cost of organisational controls

The assessment of the cost of controls also covered organisational controls, that correspond broadly to the non-expenditure related internal controls operated by DG ENER.

[88] This estimate is based on EASME's calculated COC and reflects the 11.4% share of EASME's resources allocated to the H2020 Energy programme and to the Legacy IEE CIP.

Table 2.21: Overview of the estimated cost of control – non-expenditure related

	FTEs	Cost equivalent
Budget and accounting	3.1	EUR 0.46 million
Coordination	3.9	EUR 0.57 million
Fraud prevention	0.5	EUR 0.07 million
ICT and information security	13.05	EUR 1.93 million
Asset management	1.9	EUR 0.34 million

DG ENER only devotes limited resources to Budget and Accounting, Coordination, Antifraud and Asset Management.

The costs associated to ICT and Information security components are specifically related to the need for DG ENER to maintain and operate a specific secure environment for IT infrastructure and applications for Nuclear Safeguards operations under the Euratom Treaty.

In March 2018, DG ENER adopted a new IT governance for all information systems developed in Luxembourg. This framework is being implemented.

A Project Support office controls that all information system are at minimum registered in the central IT database of the Commission (Govis). Synergies are explored. As regards IT development activities, attention is given to the need to revise the development priorities to take into account the human resources availability. As regards IT infrastructure, the points of focus are the need to redeploy one FTE to reinforce the team.

2.1.1.5 Conclusion on the cost-effectiveness of controls

Based on the most relevant indicators and control results, DG ENER assessed the effectiveness, efficiency and economy of the control system and reached a positive conclusion on the cost-effectiveness of controls.

The assessment of the costs and benefits of controls on grants under direct management is considered to be cost-effective overall. Although these programmes are being phased out, the cost of controls remains low or moderate compared to the expenditure managed. The level of control remains significant, and has an effective role in the prevention, detection and correction of errors. The control strategy for grants supporting the Nuclear Decommissioning Programme under indirect management is considered cost-effective. The level of the costs remains moderate in comparison to the complexity of the instrument and of its governance framework. The strong controls are instrumental to maintain the programme on track in terms of schedule and budget. Tangible results are visible.

The control strategy for the administration of the Euratom contribution to the ITER project under indirect management is considered to be cost-effective. The costs are low relative to the action value. Given the complexity of this one-of-its kind project, the scale of the EU contribution and the political importance of the

project, DG ENER consider that it is necessary to maintain an extensive control strategy.

The control strategy for the DG ENER contribution to the CEF delegated instruments portfolio is considered to be cost-effective. The costs remain low, which corresponds to the relatively low stake of DG ENER into this instrument.

The control strategy for the budgetary support to ACER, INEA and EASME is cost-effective. The control strategy corresponds to the organisational setup.

These controls also have qualitative benefits. Ex-ante controls contribute to the achievement of the policy and operational objectives and provide an assurance that the project is running adequately. Ex-post controls have a positive deterrent effect within the programme, which will foster system improvements and a better compliance with regulatory provisions.

The organisational controls operated by DG ENER are considered cost-effective overall. DG ENER only devotes limited resources to Budget and Accounting, Coordination and fraud prevention. The resources devoted to ICT controls correspond to specific needs.

To summarise, the efficiency and the effectiveness of the controls are, as a whole, supported by quantitative and qualitative benefits, identified for the relevant stages of the process, the costs of the controls remain overall low and the higher cost items are justified by objective needs or by specific circumstances, thus providing a positive impact on the assurance

2.1.2 Audit observations and recommendations

This section reports and assesses the observations, opinions and conclusions reported by auditors in their reports as well as the limited conclusion of the Internal Auditor on the state of internal control, which could have a material impact on the achievement of the internal control objectives, and therefore on assurance, together with any management measures taken in response to the audit recommendations.

2.1.2.1 Internal Audit Service (IAS)

During the reporting period, the IAS carried out the following engagements related to DG ENER:

Audit on supervision by DG ENER of control strategies of the delegated bodies implementing the NDAP

The audit was announced in December 2018 and is planned to be finalised in 2019.

Audit on legacy programmes in DG ENER - management of final payments and closure

In its final audit report issued in October 2018, the IAS concluded that the internal control system in place provides reasonable assurance regarding the achievement of the business objectives set up for the management of final payments and closure of commitments under the legacy programmes in DG ENER. The IAS did not identified any critical or very important issues, but

considered that there was room for further improvement in the procedure for deciding whether to implement the financial consequences of audit results, the instructions to financial actors on how to use the paperless workflow and the procedure for the amendment of FP7 grant agreements. Three important recommendations were formulated. An action plan was prepared to mitigate the identified risks by the end of September 2019.

Follow-up of recommendations resulting from previous IAS audit reports:

Audit on Security of IT applications supporting nuclear accountancy and inspection processes

In its final audit report, issued in July 2017, the IAS acknowledged that DG ENER put in place a number of organisational and technical controls aimed at mitigating the security risks to which its IT systems are exposed in the domain of nuclear safeguards. The IAS nevertheless concluded that significant issues still needed to be addressed, and formulated two very important and three important recommendations. The very important recommendations were related to:

- IT Security Governance arrangements;
- IT security risk analysis and security arrangements.

DG ENER accepted all recommendations and prepared an action plan to address the identified weaknesses by the end of December 2018. The actions aim at ensuring that an IT governance body properly evaluates, directs and oversees effectiveness and efficiency of IT security related activities for the secure network and strengthening DG ENER controls over the secure network and remote connections.

By end of 2018, DG ENER has completed the majority of planned actions. The ITSC (governance body) mission statement was revised to redefine and reinforce its role of evaluating, directing and overseeing effectiveness and efficiency of IT security related activities. Furthermore, the new LISO for IT systems in Luxembourg was nominated.

However, some actions require more time for implementation and will be completed by end of March 2019 (according to the revised implementation target date):

- recommendation 1 (*IT Security Governance arrangements*): the last remaining action to be implemented concerns the process for assessing IT security threats and vulnerabilities, their likelihood and potential impact on business. The process has been defined end of 2018 in the frame of the ongoing accreditation exercise and will be launched in the beginning of 2019, after formal validation of the business director.
- recommendation 2 (*IT security risk analysis and security arrangements*), three actions requires more time for completion: the IT security risk assessment is being finalised; the upgrade and replacement of servers is planned for the beginning of 2019; and the action plan for penetration testing and vulnerability is planned to be submitted for the approval of the Senior management early 2019.

Audit on Management of recovery orders for competition fines (incl. guarantees for competition fines) and for recovery orders in the context of the Commission's 'corrective capacity' – Phase I

In its final audit report, issued in September 2017, the IAS did not identify any

high risks but revealed certain areas where the improvement was needed. Two important recommendations formulated were implemented by end of September 2018 and submitted to IAS review.

Audit on the production process and the quality of statistics not produced by DG EUROSTAT

In its final audit report, issued in January 2018, the IAS noted that DG ENER had in place processes and activities to ensure that its statistical needs were met either by external providers or by processing internally data already available. However, the IAS concluded that the improvement was needed in certain areas and formulated four important recommendations to be addressed by DG ENER[89].

DG ENER implemented by December 2018, three out of four important recommendations[90].

Audit on the management and functioning of Euratom Safeguards

In its final report issued in May 2016, the IAS concluded that DG ENER designed and implemented effective structures and processes for the Euratom Safeguards enabling the Commission to fulfil its primary law obligations regarding nuclear safeguards. However, the IAS noted a few areas for improvement related to formally assessing the relevance and effectiveness of the Commission's overall safeguards approach, formally approving the content of the Yearly Safeguards Statement, the need to establish an HR strategy outlining how to satisfy future staffing needs of the Euratom Safeguards Service and finally improving the existing objectives and indicators

Three important recommendations[91] were implemented by July 2018 and submitted under the IAS review[92].

Audit on the supervision of ITER

In its final report issued in September 2016, the IAS acknowledged the efforts made by DG ENER to better monitor and steer the completion of the ITER project in the complex governance framework in which it operates. However, it concluded that that there were still significant weaknesses affecting the effective supervision on the implementation of the ITER project both at the level of IO and F4E.

Two very important and one important recommendations were formulated. The very important recommendation 1, related to DG ENER's supervision strategy for the ITER organisation and project was satisfactory implemented and closed by the IAS in May 2018. The very important recommendation 2, on Supervision and monitoring of F4E activities was downgraded in May 2018 to important at the light of the progress made. Its implementation was completed by end-December 2018.

[89] Recommendation 1: Completion of the Statistical Inventory and Masterplan; Recommendation 2: Management of the statistical process by DG ENER; Recommendation 3: Methodological and quality framework for internally produced or acquired internally; Recommendation 4: Referencing and use of disclaimer when publishing statistics.

[90] Implementation of Recommendation 2 (Important) - Management of the statistical process by DG ENER is delayed (was due by 31.10.2018).

[91] Recommendation 1: Assessment of the Euratom Safeguards approach; Recommendation 2: Reporting on the implementation of Euratom Safeguards and the yearly safeguards statement; Recommendation 3: Human resources.

[92] Recommendation 4 (Important): Operational objectives and performance indicators, was satisfactory implemented and closed by the IAS in January 2017.

Audit on the supervision of the implementation of Connecting Europe Facility

In its final report issued in January 2016, the IAS acknowledged the efforts made by DG ENER to monitor and steer the implementation of CEF in the complex governance and regulatory framework in which it operates. However, the IAS concludes that further improvements were necessary to ensure effective supervision arrangements on the implementation of the CEF programme and on the achievement of the CEF and TEN-E objectives.

One very important[93] and two important recommendations[94] were satisfactory implemented and closed by the IAS in May 2018.

Audit on Governance and Supervision of the Nuclear Decommissioning Programme in DG ENER

One remaining important recommendation[95] was satisfactory implemented and closed by the IAS in September 2018.

Internal Audit Service – conclusion on the state of internal control

The IAS is entrusted with the responsibility to provide a conclusion on the state of internal control in DG ENER, which covers the audit work of previous years[96] and all open recommendations issued by the IAS.

In its conclusion the IAS stated that the internal control systems in place for the audited processes are effective, except for the observations from audit on the security of IT applications supporting nuclear accountancy and inspection processes, giving rise to the 'very important' recommendations. These recommendations still need to be addressed, in line with the agreed action plans.

The impact of the residual risks related to these recommendations on the internal control principles and on the related component is reflected in the Internal Control self-assessment discussed below.

2.1.2.2 European Court of Auditors (ECA)

a. Audit work 2017 – Declaration of assurance (DAS) 2017

In October 2018, the European Court of Auditors published its 2017 Annual Report on the EU budget and presented it to the Parliament (CONT[97]). Overall, it detected fewer errors across all areas of spending than in the past, and the final overall level of error for 2017 has reached an all-time low.

ECA addressed energy policy as part of the Competitiveness for Growth and Jobs chapter[98] and concluded that the testing of transactions indicates that the most likely error present in the population is 4.2% (compared to 4.1% in 2016 and 4.4% in 2015). The payments related to energy projects represent around 7% of the total of the whole chapter.

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93 Recommendation 1: DG ENER's supervision strategy on PCIS development.
94 Recommendation 2: Commission's communication on PICS implementation and recommendation 3: CEF mid-term evaluation.
95 Recommendation 3: Co-financing.
96 Final audit reports issued in the period 01/02/2016 – 31/01/2019.
97 European Parliament's Committee on Budgetary Control.
98 Chapter 5 of the ECA's annual report 2017 (OJ C 375, vol. 61, 04.10.2018).

The part of the sample related to energy budget lines was limited - 6[99] out of 130 transactions. ECA' audit work did not raise any particular observations for three of these payments and only non-quantifiable errors for two others. A single quantifiable error was detected in the case of H2020 projects. This error was attributed to the control systems of the beneficiary.

Furthermore, it also performed an audit of the accounts of DG ENER as of 31 December 2017. This included an analysis of closure operations, substantive testing of invoices and pre-financings and an analysis of cut-off data. The Court issued several observations related to the cut-off exercise and to the estimation of recoveries.

In the final version of the Court of Auditors' Annual Report, DG ENER was not concerned by any specific observations. However, one of the recommendations from Chapter 5 is addressed to INEA. It asks for guidelines on eligibility criteria for sub-contracting costs and is also applicable to CEF-Energy. The recommendation was accepted and was implemented in January 2019.

b. Audit work 2017 - Declaration of assurance (DAS) 2018

As regards to the audit work for the DAS 2018, the work of the Court of Auditors on the statement of assurance (DAS) 2018 is still ongoing. Eight transactions (one from the EEPR programme, five from the H2020 programme, one from FP7 and one from CEF-Energy) have been sampled. The Court of Auditors has finalised five audits, three of them without any observations and two resulting in non-quantifiable errors.

c. Audit work 2017 – Special Reports

In its **Special Report 5/2018 "Renewable energy for sustainable rural development significant potential synergies but mostly unrealised"**, the ECA examined the link between renewable energy and rural development, focussing on expenditure under the European Agricultural Fund for Rural development (DG AGRI). They concluded that there were potential synergies, but that these remained mostly unrealised. DG ENER was associated to this audit as regards its renewable energy policies. The key observation in that respect was that the EU renewable energy policy could be more explicit in establishing the conditions for linking renewable energy successfully to rural development. The renewable energy policy framework currently under discussion has the potential to improve the situation.

Two recommendations were addressed to DG ENER regarding:

(i) The consideration of the circumstances and needs of the rural community and economy in the renewable energy policy and the introduction of a consultation process.

(ii) The provision of sufficient safeguards against the unsustainable sourcing of biomass for energy by the future policy framework for bioenergy.

Both recommendations were accepted and in effect partially addressed by recent initiatives, such as the Commission proposals on the new Energy Union

[99] One transaction from EEPR, two H2020 transactions and three clearing transactions (ITER, CPMA and EBRD).

Governance Regulation and on the recast of the Renewable Energy Directive, which have entered into force on 24 December 2018.

DG ENER was also involved in the **Special Report 24/2018 "Climate action: EU failing with commercial deployment of carbon capture and innovative renewables",** as regards the Offshore Wind and CCS components of the European Energy Programme for Recovery (EEPR). They found that the EEPR contributed positively to the development of the offshore wind sector, but fell short of its ambitions for carbon capture, a sector that was affected by adverse investment conditions and uncertainty in regulatory frameworks and policies.

The two recommendations to which DG ENER was associated have been implemented.

d. Summary of results from the Court's 2017 annual audit of the European Research Joint Undertakings

In this summary providing an overview of the results of the annual audits on the European Research Joint Undertakings, the Court of Auditors reported unqualified opinions on both the reliability of the accounts and the legality and regularity of transactions for F4E considering that the transactions underlying the annual accounts of F4E for the year ending 31 December 2017 are, in all material respects, legal and regular. It drew the attention on an 'Emphasis of matter on the EU contribution to the ITER project costs'.

AS in 2016, the Court of Auditors' opinion is accompanied by an 'emphasis of matter'[100] related to the EU contribution to the ITER project.

These issues were addressed in the framework of the 2016 baseline revision and are constantly monitored by DG ENER at both F4E and wider project level.

No additional funding will be needed for ITER under the current MFF and the capped budget (EUR 6.6 billion for the construction phase in 2008 values) set by the Council of the European Union in 2010 serves as a ceiling for the Joint Undertaking's spending up to 2020.

The Court also acknowledged the progress made in implementing audit recommendations and noted additional challenges related to the ITER project, such as the achievability of first plasma, the future cost of decommissioning and the uncertainty surrounding decision of the United Kingdom to withdraw from the EU and Euratom. DG ENER monitors the evolution of these issues. Furthermore, a group of independent experts confirmed that 2025 was the earliest technically achievable date for First Plasma.

e. Follow-up of recommendations issued by the Court of Auditors and by the Discharge Authority

On 31 December 2018, DG ENER implemented 28 of the 31 recommendations for which it was in the lead.

Beyond the two above-mentioned recommendations stemming from the recent SR 5/2018, one recommendation from SR 22/2016 on Nuclear Decommissioning (2016), due end 2018, was slightly delayed and is now expected to be completed by mid-2019.

[100] An emphasis of matter is used to draw attention to a matter which is not materially misstated in the accounts, but is of such importance that it is fundamental to the users' understanding of the accounts.

2.1.2.3 Conclusion

Overall, internal and external audit work contributes significantly to the continuous improvement in DG ENER systems and operations. The IAS and the Court of Auditors findings and recommendations are subject to a systematic follow up by the Directorate-General.

Although these audits resulted in key findings, it is noted that all accepted very important recommendations issued by the IAS have led to specific action plans being drafted to address the underlying issues. Recommendations issued by the Court of Auditors and by the Discharge Authority were also systematically addressed.

The current residual risk from the audit recommendations remaining open in DG ENER does not impair the declaration of assurance.

2.1.3 Assessment of the effectiveness of the internal control systems

The Commission adopted an Internal Control Framework based on international good practice, aimed to ensure the achievement of policy and operational objectives. In addition, as regards financial management, compliance with the internal control framework is a compulsory requirement.

DG ENER put in place the organisational structure and the internal control systems suited to the achievement of the policy and internal control objectives, in accordance with the standards and having due regard to the risks associated with the environment in which it operates.

2.1.3.1 Source and methodology for the internal control assessment

The self-assessment was based on four main building blocks:

- The evaluation of **monitoring indicators,** based on the baseline (and targets) developed together with the 2018 Annual Management Plan;
- The evaluation of **audit results** (new or outstanding recommendations) from the IAS, the ECA, OLAF or DG BUDG; especially recommendations that may highlight systemic problems with internal controls;
- The analysis of registered **non-compliances and exception cases** that may reveal underlying deficiencies;
- The analysis of various **other sources of information** that include: assurance received from entrusted entities, interviews with the representatives of all Directorates and horizontal SRD services, the review of internal procedures, document and the intranet pages of DG ENER.

The assessment also considered the annual conclusions of the Internal Audit Service on the functioning of the internal control systems and the results of the 2018 DG HR Staff Survey, which provide the basis for some of the monitoring indicators.

2.1.3.2 Internal Control Self-assessment results for 2018

Based on the approach described above and the work performed, all controls associated with the five components and the 17 principles were found to be present in DG ENER for 2018. In addition, none of the components or principles was found to be affected by a critical or serious weakness. Concerning the effectiveness of the controls, the assessment concluded that:

- 15 principles were assessed **as fully operational and effective**; thus meeting the expectations of the internal control baseline;
- two principles (10 and 11) were assessed as present but not fully effective.

As regards **Principle 10 "Design of Control Activities"**[101], control weaknesses were highlighted in two important recommendations stemming from the 2018 *Audit on the management and closure of legacy programmes in DG ENER*. The two recommendations touch upon the closure process of legacy projects[102] and on the management of contract amendments. DG ENER developed an action plan to address the recommendations by improving monitoring procedures, ensuring the documentation of checks before payment and clarifying roles and responsibilities for managing amendments to grant agreements.

The assessment also noted that the Business Continuity Plan of DG ENER had not been tested in the last 12 months; there was no available evidence that these plans were tested recently, thus no possibility to guarantee the correct implementation of the planned continuity measures, including the operational of the Crisis Management Team. DG ENER developed an action plan to address the situation by updating and testing the continuity plan by the end of 2019.

The presence of these two issues led to the conclusion that this principle was affected by a moderate[103] deficiency.

Principle 11 "Controls over Technology"[104] covers general controls over technology such as IT governance, development and maintenance, as well as cybersecurity. The assessment noted the incomplete coverage of such controls over externally developed IT systems. These systems are not yet fully part of the formal IT governance framework of DG ENER and thus may have weaknesses that could lead to cybersecurity incidents, loss of personal data or the failure of business continuity or disaster recovery controls. Corrective actions have been undertaken, including the establishment of an IT project office. In addition, a risk review of externalised IT systems will be completed by the end of 2019.

The presence of these issues led to the conclusion that this principle was affected by a moderate deficiency.

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[101] The full title of Principle 10 is "*The Commission selects and develops control activities that contribute to the mitigation of risks to the achievement of objectives to acceptable levels.*"
[102] For DG ENER, the majority are FP7 research projects and projects under the EEPR programme.
[103] According to the definition provided by DG BUDG. An overview of the severity of deficiencies is provided in Annex 2 "Assessment methodology".
[104] The full title of Principle 11 is "*The Commission selects and develops general control activities over technology to support the achievement of objectives.*"

The self-assessment also noted improvement areas for **Principle 3** "Management structures and responsibilities"[105], **Principle 4** "Commitment to attract, develop and retain competent individuals"[106], **Principle 12** "Deploying control activities"[107] and **Principle 13** "Relevant and quality information"[108]. These improvement opportunities have no impact on the effectiveness of the control system as a whole and will be implemented within the framework of continuous improvements of the internal control system.

2.1.3.3 Risk management

DG ENER put in place a risk assessment process ensuring an appropriate coverage of all its activities. In addition to this, continuous risk management processes are in place for the two largest components of the risk universe: the Euratom contribution to ITER and to the Nuclear Decommissioning Assistance Programme (NDAP).

One significant risk was identified in 2018, pertaining to the governance and performance of the ITER programme. This risk mirrors the inherent complexity of this project and the importance of the related challenges. The wide-ranging effort to strengthen the governance framework was continued, also covering the supervision by DG ENER of the Fusion for Energy Joint Undertaking, which responsible for providing Europe's contribution to ITER. For 2019, a specific attention remains attached to the ITER risks, largely due to the magnitude of the programme.

DG ENER was also affected by the crosscutting risks identified at Commission level, in particular:

a) The preparation for the withdrawal of the United Kingdom from the European Union is of particular importance in the energy sector. As further detailed under section 1, the main actions taken take the form of specific legislative proposals. DG ENER has prepared a legislative proposal for Brexit preparedness concerning an amendment to the Energy Efficiency Directive and Governance Regulation.

b) The actions taken as regards data protection are aligned with the corporate action plan of 7 November 2018 (see section 2.2.3.b "Data protection").

c) IT security: Corporate action in this respect includes the Digital Strategy adopted in November 2018 and the creation by the Commission of the Information Technology and Cybersecurity Board. The College adopted on 12 March 2019 the Corporate Information Security Strategy.

2.1.3.4 Exceptions and non-compliance

The normal functioning of the internal control systems was closely monitored and followed up throughout the year by the systematic registration of non-compliance events and exceptions. Such events do not represent a weakness in controls, as

[105] The full title of Principle 3 is "*Management establishes, with political oversight, structures, reporting lines, and appropriate authorities and responsibilities in the pursuit of objectives.*"
[106] The full title of Principle 4 is "*The Commission demonstrates a commitment to attract, develop, and retain competent individuals in alignment with objectives.*"
[107] The full title of Principle 12 is "*The Commission deploys control activities through corporate policies that establish what is expected and in procedures that put policies into action.*"
[108] The full title of Principle 13 is "*The Commission obtains or generates and uses relevant quality information to support the functioning of internal control.*"

they could be the results of many (even external) factors. Nevertheless, such events are recorded and analysed to find indications of an underlying, systemic weakness.

During 2018, the Internal Control team of DG ENER has recorded a total of **14 cases (13 non-compliances and one exception)**, which are discussed below.

Exception

The exception request was related to the IRENA Remap 2030 programme, the financing of which was included in the Horizon 2020 Work Programme (2018-2020) with a budget of EUR 350.000. Due to an administrative mistake during the last phases of the preparation of the AWP, this action was specified as a "grant to identified beneficiary" instead of the necessary "negotiated procedure". The distinction is important because the results of this action would remain the property of IRENA through grant financing, while ENER intended to acquire the intellectual property rights for the use of the study.

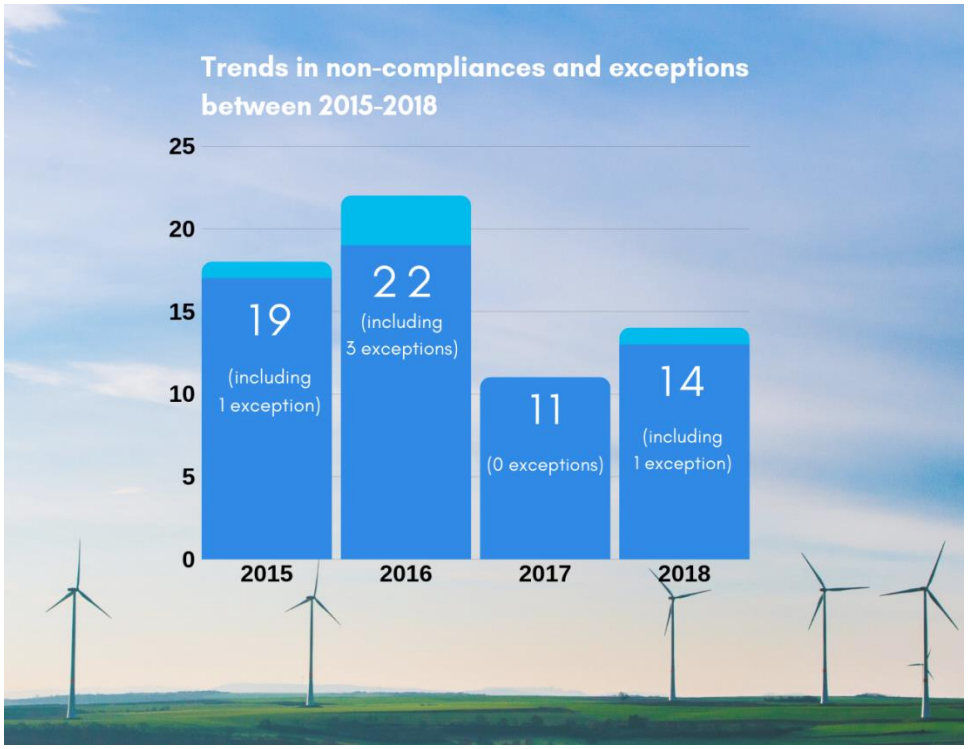
Therefore, the exception was necessary to ensure the legality and regularity of the contract. The resulting risks were estimated to be low as the exemption had no implication either on the budget or on the beneficiary. However, not implementing the action could have compromised the reputation of DG ENER and the Commission in the global energy community.

Non-compliances

The analysis of the 13 non-compliance cases revealed that the most common sources of errors relate to:

- *Missions procedures* (7 cases, compared to 2 cases in 2017);
- *Delegations* (1 case, compared to 0 case in 2017)
- *Contractual and financial procedures* (4 cases, same as in 2017).

The potential risks resulting from these errors were assessed as low or non-existent due to the presence of other compensating controls. When considering the number of comparable transactions (number of meetings organised, number of missions performed), the number of non-compliance cases remains relatively low for 2018. The number, nature and typology of the incidents are not considered as indicative of systematic control issues.



Trends in non-compliance cases 2015-2018

The downward trend in non-compliance events could partially be attributed to the ongoing awareness raising campaign introduced on internal control, risk management and fraud prevention matters. One area that shows a significant improvement is the organisation of meetings, where no cases were recorded in 2018 compared to the five events in 2017. On the other hand, the increase related to the missions procedures were caused by either administrative errors (mostly regarding the encoding of data in MIPS), or unforeseen changes in mission schedules.

Thus, the focus of the internal control information campaign will be adjusted accordingly for 2019 in order to reinforce the knowledge of staff on mission procedures.

2.1.3.5 Conclusion on the internal control system

Based on the methodology and information sources described above, DG ENER has assessed its internal control system during the reporting year and has concluded that it is effective and that the components and principles are present and functioning as intended. However, moderate deficiencies were observed for Component 3 'Control Activities', due to the issues noted with Principle 10 "Design of control activities" and Principle 11 "Controls over technology".

No critical weaknesses were found in any of the components that could jeopardise the achievement of operational, financial or control objectives and prevent the Director-General from signing his declaration of assurance. The deficiencies noted with Principles 10 and 11 were assessed as "moderate"; considering the extent of the problem and the presence of compensating controls.

The self-assessment also noted opportunities for improvement areas for four other principles. These issues were not assessed as deficiencies and have no impact on the overall assurance.

Overall, the assessment establishes that the internal control system of DG ENER provides reasonable assurance that the resources have been used for their intended purpose and in accordance with the principles of sound financial management; and that the control procedures put in place give the necessary guarantees concerning the achievement of operational objectives as well as the legality and regularity of the underlying transactions.

Based on the scope, methodology and result of the 2018 self-assessment, as described above, this report concludes that in 2019 there is no need to apply changes to the internal control architecture and to the financial circuits, aside from the mitigating actions and improvements identified in the present report.

2.1.4 Conclusions on the impact as regards assurance

This section reviews the assessment of the elements reported above and the related of the sub-conclusions above, and draws the overall conclusion supporting the declaration of assurance and whether it should be qualified with reservations.

The information reported in Section 2.1 stems from the results of management and audit monitoring contained in the reports listed. These reports result from a systematic analysis of the evidence available. This approach provides sufficient guarantees as to the completeness and reliability of the information reported and results in an adequate coverage of the budget delegated to the Director-General of DG ENER.

Overall, the controls carried out by DG ENER for the management of the budget, whether implemented directly or indirectly, were effective, efficient and economical for the reporting year. The resources assigned in 2018 to the activities described in this report were used for their intended purpose and in accordance with the principles of sound financial management. The control procedures put in place give the necessary guarantees concerning the legality and regularity of the underlying transactions, safeguarding of assets and information and the prevention, detection and correction of fraud and irregularities.

The AOD's conservative assessment of the amount of relevant expenditure during the year not in conformity with the applicable contractual and regulatory provisions at the time the payment estimates the overall amount at risk at closure at EUR 4.56 million, or 0.37% of the relevant 2018 expenditure.

The assessment on legality and regularity for the directly managed FP7 programme returns a level of detected error which appears to be 'persistently high' over the years in terms of potential financial impact. Regarding the directly managed EEPR programme, the residual error rate and the amount at risk are not material as regard assurance building.

Regarding Indirectly Managed Expenditure, there are no indication of any element that would impair the assurance. The information received from F4E, from the executive agencies INEA and EASME, from the NDAP entrusted entities and from ACER is considered as adequate and reliable.

DG ENER updated its antifraud strategy in 2017, based on a specific assessment of its fraud risks. The relevant actions for 2018 are considered as fully implemented.

DG ENER identified one significant risks for 2018, not related to specific fraud risks. Action plans to reduce or mitigate this risk was adopted and implemented. The risk related to the ITER project remains valid for 2019. One should note however that no event materialised during the reporting year in relation to this project that would impair DG ENER's declaration of assurance.

DG ENER assessed its internal control systems and concluded that the internal control framework (ICF) is implemented and functioning as intended, except for component 3 " control activities" as moderate deficiencies were observed for both principles 10 and 11. DG ENER will monitor throughout 2019 the undertaken corrective actions.

DG ENER does not consider that the recommendations issued in 2018 by the Court of Auditors and by the IAS have a material impact on the declaration of assurance of DG ENER. The recommendations issued by the IAS have led to specific action plans addressing the underlying issues and are duly reflected in the assessment of the internal control system. The key recommendations resulting from previous audits were implemented. The outstanding recommendations do not impair the assurance.

The reservation on FP7, common to the Research Family, is maintained. Indeed, DG ENER assessment on legality and regularity for FP7 returns a level of detected error which appears to be 'persistently high' over the years in terms of potential financial impact (exposure). Given the inherent risk related to a key modality of the programme (notably grants system's reimbursement mechanism based on eligible actual costs and the related risk of errors in the costs reimbursement claims submitted by the beneficiaries), the residual error is expected to remain above 2%, as well as the programme's estimated overall amount at risk at closure by the end of its lifecycle. However, the impact of this amount at risk on the overall materiality at DG level remains limited.

DG ENER implements appropriate ex-ante and ex-post controls, to the extent that they remain cost-effective and do not affect the other programme objectives nor abandon the financial scheme. Besides, the legal framework for FP7 can no longer be modified as all grant agreements have been signed. Radical simplifications to reduce errors (and to help achieve other policy objectives) were however introduced in Horizon 2020.

Therefore, under the prevailing risk environment and from a managerial point of view, DG ENER's AOD can sign the Declaration - even with a reservation for the FP7 Research Programme (see section 2.1.5).

Overall Conclusion

In conclusion, management has reasonable assurance that, overall, suitable controls are in place and working as intended; risks are being appropriately monitored and mitigated; and necessary improvements and reinforcements are being implemented. The Director General, in his capacity as Authorising Officer by Delegation has signed the Declaration of Assurance albeit qualified by a reservation concerning Seventh Framework Programme (FP7).

2.1.5 Declaration of Assurance and reservation

DECLARATION OF ASSURANCE

I, the undersigned, Director-General of DG ENER, in my capacity as authorising officer by delegation

Declare that the information contained in this report gives a true and fair view[109].

State that I have reasonable assurance that the resources assigned to the activities described in this report have been used for their intended purpose and in accordance with the principles of sound financial management, and that the control procedures put in place give the necessary guarantees concerning the legality and regularity of the underlying transactions.

This reasonable assurance is based on my own judgement and on the information at my disposal, such as the results of the self-assessment, ex-post controls, the limited conclusion of the Internal Audit Service, the observations of the Internal Audit Service and the lessons learnt from the reports of the Court of Auditors for years prior to the year of this declaration.

Confirm that I am not aware of anything not reported here which could harm the interests of the institution or those of the Commission.

However the following reservation should be noted:

FP7: the residual error rate observed by ex-post controls on grant agreements signed under the Seven Research Framework Programme is higher than the control objective of 2%.

Brussels, date

Dominique RISTORI

[109] True and fair in this context means a reliable, complete and correct view on the state of affairs in the DG/Executive Agency.

Reservation

DG ENER	Reservation on FP7
Title of the reservation, including its scope	Reservation concerning the rate of residual errors with regard to the accuracy of cost claims in Seventh Framework Programme (FP7) grant agreements.
Domain	Direct management of FP7 grants
Programme in which the reservation is made and total (annual) amount of this programme	32.04 Horizon 2020 – Research and innovation related to energy Payments made in 2018 for FP7 grants amount to EUR 39.29 million[110].
Reason for the reservation	At the end of 2018, the residual error rate is not below the materiality threshold foreseen for the multi-annual period (2%).
Materiality criterion/criteria	The materiality criterion is the residual error rate, i.e. the level of errors that remain undetected and uncorrected, by the end of the management cycle. The control objective is to ensure that the residual error rate on the overall population is below 2% at the end of the management cycle. As long as the residual error rate is not below 2% at the end of a reporting year within the FP's management lifecycle, a reservation would be made.
Quantification of the impact (= actual 'exposure')	Based on the results of audits, it is estimated that **t**he Residual Error Rate is **3.97% for FP7 projects**. This rate does not take into account corrections in favour of beneficiaries. The maximum impact is calculated by multiplying the residual error rate in favour of the Commission by the amount of FP7 payments and clearing of previous pre-financing in 2018 (in total: EUR 73.47 million). The estimated amount at risk in 2018 is EUR 2.92 million.
Impact on the assurance	Legality and regularity of the affected transactions, i.e. only payments made against cost claims (interim payments and payments of balance). The impact on assurance is limited by the reduced net financial impact that will occur in some cases where eligible expenditure is limited by budget ceilings. The amount at risk of EUR 2.92 million represents 0.24% of DG ENER payments in 2018 (EUR 1.23 billion). Consequently, reasonable assurance can be provided.
Responsibility for the weakness	The main reasons for errors are: • the complexity of the eligibility rules as laid down in the basic acts decided by the Legislative Authorities, based on the

[110] The amount for the ABB activity 32.04 reported in Annex 3, table 2, column 2 'Payments made' show a total of EUR 81.21 million as it also includes payments for H2020 projects, to the ELENA facility as well as other expenditure of operational and administrative nature related to energy.

	reimbursement of actual eligible costs declared by the beneficiaries; • the fact that there are many thousands of beneficiaries making claims, and not all can be fully controlled. The different control provisions set out by the Commission services, along with the audit certificates on financial statements and ex-post audits, can mitigate these risks to a certain extent, but can never be carried out on 100% of the cost claims received.
Responsibility for the corrective action	The possibilities to simplify the FP7 rules have been exhausted. The programme is now in its final stage of implementation: the total amount paid per year will be decreasing, and therefore the financial impact too. Audits may continue at a low level in case of the identification of potential irregularities in projects. However, no further actions are programmed.

2.2 Other organisational management dimensions

This section covers the work of the horizontal services within DG ENER: human resources management, budget and financial management (reported in section 2.1), information management, better regulation and external communication. The aim of these services is to provide high quality administrative support, advice, assistance, control and monitoring on the use of resources.

For an extensive reporting on all components, please refer to Annex 2.

2.2.1 Human resource management

In 2018, DG ENER kept aligning its resources and technical expertise to address its main activities and priorities, notably in the framework of the important inter-institutional negotiations related to the adoption by the co-legislators of the Clean Energy package for all Europeans.

In parallel, it addressed specific human resources needs including requirements to meet quantitative targets of first female appointments at middle management level and to further improve issues such as working conditions, internal communication, outgoing staff replacement, equal opportunities, etc.

A Commission administrative decision[111] sets out the new approach and the related new quantitative targets of first female appointments to be made per Directorate-General and service at middle management level by 1st November 2019. DG ENER's quantitative target for first female appointment to middle management function is three. DG ENER has already exceeded this target (1 appointment in 2017 and 3 appointments in 2018). Specific attention is given to the nuclear domain where female appointments have always been challenging due to the scarcity of female candidates in this specific and technical domain. In this context, female candidatures are promoted and will be encouraged also in the future. It is to note that out of the four first female appointments mentioned above, three took place in Directorate ENER.DDG2.E "Euratom safeguards". Promotion of female representation in Deputy Heads of Unit function will be extended in 2019 as well. In addition, DG ENER will keep on promoting the 'Female Talent Development Programme' organised by DG HR.

DG ENER will maintain its organisational fitness by a close monitoring of corporate organisational fitness indicators.

Replacement of outgoing staff is carefully managed. It affects in particular the nuclear domain, due to retirements. Specific open competitions are organised in this context. A new specific competition in the nuclear domain at AST level was requested to DG HR in 2018.

In addition, DG ENER intensified its efforts to further improve its working conditions and its staff engagement. Several events were organised in this regard: an aromatherapy workshop in Brussels on 19 April 2018, two conferences on nutrition (one in Brussels on 24 April 2018 and one in Luxembourg on 7 June 2018), a mental health day conference (10 October 2018) and a conference on "5 steps to save a life" (9 November 2018) in Brussels, two health weeks organised

[111] SEC(2017) 359 final.

for the first time in DG ENER (one in Brussels on 28 May – 1 June 2018 and one in Luxembourg on 18-22 June 2018). These events comply with the policy of the Commission on well-being and with the fit@work initiative. DG ENER will keep on organising such activities in 2019.

During 2018, the staff engagement in DG ENER as per the staff survey results increased significantly.

Regarding ethics and organisational values, two lunchtime conferences were organised in 2018 (one in Brussels on 7 June 2018 and one in Luxembourg on 9 October 2018). This is an important priority for DG ENER and part of its core values.

Moreover, lunchtime conferences related to DG ENER activities are organised on a regular basis in Brussels and in Luxembourg. In this context, a colleague from the communication unit is in charge of establishing the annual lunchtime conferences agenda of the DG and of promoting them.

A DG ENER staff event was organised on 26 November 2018. Staff events are a unique opportunity for DG ENER staff from both locations to meet and to take stock of recent achievements and present future challenges that the DG will have to face in the forthcoming months/years. They are also an excellent informal platform to trigger two-way communication between senior and middle management and staff. Moreover, DG ENER reserves part of its training budget to organise team buildings when and where appropriate.

Newcomers welcome sessions are organised twice a year, involving all directorates.

DG ENER strongly promoted the 2018 staff survey. This resulted in a very high participation rate of DG ENER staff (65%), one of the highest in the Commission. This is a huge improvement compared to the latest staff survey in 2016 (38%). Once the staff survey results are communicated, a dedicated follow-up action plan will be agreed by DG ENER senior management in cooperation with line managers and the HR Business Correspondent.

Lastly, DG ENER continued providing the radiation protection expert service and regular information and training sessions for exposed workers, as required in the Luxembourgish radiation protection framework.

2.2.2 Better regulation

DG ENER is fully committed to fostering a Better Regulation culture and implementing the Better Regulation Guidelines. In order to increase the understanding of staff in DG ENER on Better Regulation, especially concerning the changes in the revised guidelines, explain their practical implementation and answer any open questions, Directorate A together with the relevant colleagues in SG organised a specific lunchtime training on "Regulation even better! The revised Better Regulation Guidelines/toolbox and what it means for our work".

In terms of strengthening DG ENER's horizontal preparedness for ensuring robust and sound, better regulation, the analytical tools of the DG were continuously improved through the work of Directorate A. For example, statistical country data sheets and Energy Union indicator tools were released during 2018 and widely used within the DG especially for the preparation of the work under the European Semester. Cooperation with Eurostat and the JRC was ongoing and delivering well

despite the official expiration of the memorandum of understanding with the JRC.

Improvement and augmentation of the analytical and evidence base for better policy development and regulation. **Main outputs in 2018:**			
Output	**Indicator**	**Target**	**Latest known results (2018)**
Improved access to current market data	Greater use of facts and figures in briefings and speeches to improve accuracy Delivery of related studies on market price development (inc. OTC) and cost of security of supply disruptions	Increased use of dashboards by staff Launch of studies in accordance with calendar	1. Statistical country datasheets - second release July & August 2018 - email distribution to all DG ENER staff - thousands of downloads/visualisations on the public website in 2018 2. Energy Statistical Pocketbook 2018 - email distribution to all DG ENER staff - mailbox distribution of the printed version to all DG ENER staff - -thousands of downloads / visualisations on the public website in 2018 3. Energy Union indicators tools - master file versions distributed to all DG country desks and other staff - webtool on the DG ENER website: thousands of visualisations/users over 2018 4. Weekly oil bulletin - email distribution to all DG ENER staff - over 150000 visualisations / downloads on DG ENER website in 2018 5. Increased use of the EMOS Qlikview dashboards with 97 distinctive users in 2018 accessing the dashboards (>1000 times)
Closer collaboration with JRC & Eurostat	Revision of or compliance with the MoUs of Eurostat and JRC	Confirmation of satisfactory delivery of MoU work	MoU with Eurostat amended early 2018 MoU revised and new administrative agreement with JRC. Cooperation with the JRC is excellent.
Enhanced economic modelling capability and further use of modelling analysis in evaluations & preparation of better regulation	Use of modelling analysis in reports reviews, evaluations and impact assessments	Increased reference to modelling results in relevant documents	Updated modelling was performed taking account of revised technology costs assumptions.

2.2.3 Information management aspects

a. Information management

In October 2016 the Commission adopted a European Commission corporate strategy on Information Management[112].

The strategy states that *"data and information are to be considered as strategic assets by DGs and should be complete, reliable, relevant and easy to retrieve"* (Strategic Plan Indicator 1[113]). DG ENER widely reached the target for this indicator with 2.66% of documents unfiled thanks to a regular monitoring carried out by the CAD[114] throughout the year.

The strategy also establishes that: *"data, information and knowledge should be shared as widely as possible within the Commission"* (Strategic Plan Indicators 2 and 3[115]). *"This should be done unless there are legal requirements or clear justifications for access to be restricted, in which case those restrictions should be enforced rigorously and uniformly."* Important awareness actions were launched to ensure the required balance between the need-to-share and the need-to-protect principles on information management. In this context, a specific taskforce on files accessibility was established and the review on HAN[116] files accessibility was launched. Active files are currently under assessment and the final results of the exercise are expected in the first quarter of 2019. Until the management endorses the files accessibility policy, it has been decided that no access to DG ENER files will be granted to other Directorates-General. This explains why, while files accessibility within DG ENER fully meets the target of the Strategic Plan 2016-2020 (Indicator 2), HAN files shared with other Directorates-General are set to 0 (Indicator 3).

In terms of awareness actions, the dashboard on Information Management indicators was created and uploaded quarterly into the e-Domec correspondents collaborative space. In addition, the e-Domec correspondents' network in DG ENER held three workshops in Brussels and three in Luxembourg.

The 2018 assessment of paperless actions implemented in DG ENER showed very good results on the efficiency of the electronic workflows: increase for e-signatory use, better use of paperless options and decrease of paper signatories in parallel. Paper storage and circulation was reduced by the disposal of 115 scanned incoming paper mails. DG ENER-Luxembourg introduced paperless workflows in 2018 and workflows for financial files are fully implemented.

The intermediate archives of DG ENER in Brussels are now operational. The first files closure annual exercise was finalised and electronic files closed. No paper file was identified to be transferred.

In the framework of archives management, a specific workshop was organised in collaboration with the Historical Archives and a guided visit to the Historical Archives in Kortenberg was provided.

Since June 2013, EURATOM Restricted Documents have been registered in a

[112] Communication on Data, Information and Knowledge Management at the European Commission (C(2016)6626 final).
[113] Under "Information management aspects"
[114] Centre d'administration des documents.
[115] Ibid.
[116] Hermes-Ares-Nomcom

specific document management system named MEDOR[117] developed for handling such classified information. The Safeguards applications are progressively improved to directly register and store the documents they produce in the Documents Repository. This integration started in 2017 and continued in 2018. In addition, improvements have been developed to adapt MEDOR to a new interface mirroring ARES.

In 2018, the technical analysis of the integration of the "Comptabilité des Matières Fissiles" (CMF/LORE) and MEDOR was completed. This analysis is an enabler to the introduction of an automated transmission of information between the two systems.

b. Data protection

The new internal Data Protection Regulation 2018/1725 was published on 21 November 2018 and entered into force on 11 December 2018. In the autumn 2018, the Commission established an Action Plan to prepare all Commission services for the entry into force of the new data protection regulation. The Action Plan was adopted on 7 November 2018[118].

A new Data Protection Coordinator (DPC) was appointed on 22 November 2018. The DPC was provided with the necessary support and resources, and has a clear reporting line to senior management.

In terms of actions already taken to ensure compliance with the new data protection rules, the DG ENER conducted, an exercise of mapping of personal data processing activities[119].Based on this exercise the DG ENER established an inventory of existing data processing activities.

The data protection management system (DPMS) was launched by the Commission's Data protection Officer mid of December 2018. Following the entry into service of the DPMS, DG ENER notifications are currently being converted into records.

The existing privacy statements has been reviewed and currently being updated if necessary as a part of the conversion of notifications into records, moreover new ones have been drafted to ensure the transparency towards data subjects e.g. during various conferences organized by DG ENER.

While the conversion of notifications into records and updating privacy statements, DG ENER is paying particular attention as regards lawfulness, data minimisation and storage limitation as well as DG ENER ensures that information provided to the data subjects is concise and transparent using clear and plain language.

In addition, DG ENER established an inventory of all processing operations requiring international transfer to the international organisations.

In order to raise awareness on the revised data protection rules within DG ENER, the DPC provided information sessions on the data protection matters to the senior management and to the units on demand. Moreover, the DPC regularly

[117] Metada and Document Repository.
[118] The Commission's Data Protection Action Plan (C(2018) 7432 final) for the implementation of Regulation (EU) 2018/1725 on the protection of natural persons with regard to the processing of personal data by the Union institutions, bodies, offices and agencies and on the free movement of such data, and repealing Regulation (EC) No 45/2001 and Decision No 1247/2002/EC.
[119] Ares(2018) 5968625Data Protection: update of personal data processing operations in DG ENER

advised on data subject rights and data controllers' obligations following various requests and questions coming from DG ENER staff.

Furthermore, DG ENER identified possible joint controllership for particular personal data processing operation with the Research and Innovation Family Directorates of the Commission, Executive Agencies and Joint Undertakings regarding the management of research projects. In this context, the DG ENER DPC was appointed as member in the CSC Executive Committee group.

The DPC also participated to the meetings organised by the office of the Data Protection Officer (DPO) of the Commission, as well as the relevant working groups meetings in the field of data protection.

2.2.4 External communication activities

Concerning external communication activities, 2018 was an important year for DG ENER with the completion of the inter-institutional negotiations on the Clean Energy for All Europeans package (even if the Regulations/Directives have not all been published yet). Overall DG ENER published 151 web news. Since DG ENER publishes news on the info site, "energy" is sometimes tagged in press releases published and drafted by other DGs, such as DG COMP or DG CLIMA.

The website, referred to as the policy site, started to co-exist with the new Europa site, referred to as the info site. The energy policy site had over 1.3 million visits in 2018, which is similar to the figure for 2017. According to web statistics for the first 11 months of 2018, the average number of visits was +/- 118 000 per month. In 2019, DG ENER will strive to maintain a high quality level on our web content and hope to keep the numbers in line with these figures, despite the fact that we will be in full "digital transformation", which may have a negative impact on our user statistics (content being rewritten, moved to new pages, merged or possibly deleted).

The DG ENER twitter account contributes to increasing the web traffic by regular posting and keeps our interested audiences up to date with energy developments and news. Over the last 4 months the account attracted around 700 new followers per month and we are about to reach 25 000 followers in December 2018 (compared to 16 900 in December 2017). In 2018, Directorate A was involved in the organisation of a high number of events (in some cases, also budget-wise). Among the most relevant were: the High Level Conference on the EU's Long-Term Strategy for emissions reduction, jointly organised with DG CLIMA (Brussels); the 11th Annual SET-Plan conference (Vienna); the Clean Energy Ministerial/Mission Innovation/Energy Infrastructure forum (Copenhagen/Malmö); the 13th European Nuclear Energy forum (Bratislava); EUSEW 2018; the EU Energy Day in the margins of the COP24 (Katowice); the Clean Energy for EU Islands Conference (Lanzarote). DG ENER organised 35 events in 2018, published on EUROPA.

Objective (mandatory): Citizens perceive that the EU is working to improve their lives and engage with the EU. They feel that their concerns are taken into consideration in European decision-making and they know about their rights in the EU.		
Indicator 1 (mandatory – provided in a ready-to-use form by DG COMM): Percentage of EU citizens having a positive image of the EU **Source of data:** Standard Eurobarometer [*monitored by DG COMM here*].		
Baseline 2014	Target 2020	Latest known results 2018

Total "Positive": 39% Neutral: 37 % Total "Negative": 22%	Positive image of the EU ≥ 50%		40 % (Eurobarometer)
Main outputs in 2018:			
Output	Indicator	Target	Latest known results 2018
Direct reach of communication actions via Twitter Jan-Nov: 4.4 MIO impressions, 8000 new followers,	Number of unique visitors to the DG ENER website Jan-Nov: 864 923 and over 3 MIO page views.	(increase of approx. 2-3.0% compared to 2016) As mentioned in the 2017 report, benchmark year 2016 (with launch of package and no publication on the info site) is not realistic. We had 1,304,297 visits in 2018 (11 months) which is similar to 2017.	There were 1,304,297 visits to the website in Jan-Nov 2018

Indicator: Percentage of EU citizens having a positive image of the EU Source of data: ***Standard Eurobarometer***	
Baseline: November 2014	Target: 2020
Total "Positive": 39% **Neutral: 37 %** **Total "Negative": 22%**	Positive image of the EU ≥ 50%

Annual communication spending (based on estimated commitments):			
Baseline 2017	Estimated commitments (2018)	Total amount spent	Total of FTEs working on external communication
1.500.000 €	1.500.000 €	Spending (2018): - Communication Unit ENER.A2: EUR 610.000 (committed at 72%) - Communication all DG ENER: EUR 1.555.000 (based on Vigie fiches under heading 'communication'). Estimated budget 2019: - Communication unit ENER.A2: EUR 890.000 (tbc, Vigie fiches still under approval) - Communication All DG ENER: EUR 2.200.000 (tbc Vigie fiches still under approval).	5,5 FTEs plus 2 external contractors

2.2.5 Examples of planned initiative to improve economy and efficiency

In 2018, significant effort made to mitigate potential delays was the approval of a Revised Construction Strategy (RCS) [120]by the ITER Council at its 22nd meeting in June 2018. This Strategy allows some installation activities to take place simultaneously, rather than sequentially as foreseen under the previous plan, addressing potential risks and ensuring that First Plasma remains on schedule for December 2025 (technically earliest achievable date).

In addition, at the 23rd ITER Council meeting in November 2018, the ITER Organisation presented a new cost-saving measure[121] whereby ITER Parties could substitute their cash contributions by additional in-kind contributions if beneficial to the project. This would allow the ITER Organization to reduce the costs of its procurements while addressing ITER Members' calls for further savings. Each proposed substitution will be evaluated on a case-by-case basis, including the savings that it would represent for the ITER Organization.

The Governance Regulation (Regulation 2018/1999) proposed by the Commission on the 30 November 2016 was adopted by the co-legislators during the course of 2018 and entered into force on 24 December 2018. The new Regulation brings together the existing scattered planning and reporting obligations from the main pieces of EU legislation across energy, climate and other Energy Union related policy areas and thereby achieve a major simplification of obligations. It reduces, aligns and updates such requirements and removes existing duplications.

The streamlined political Governance process between the Commission and Member States, with close involvement of other EU Institutions, align frequency and timing of reporting obligations, significantly enhancing transparency and cooperation. Actual figures of the savings achieved are not yet available as the Regulation entered into force at the end of 2018 and reporting obligations for Member States will commence in 2021. However, additional benefits in terms of reducing administrative burden in planning and reporting are expected. In particular, the Commission has estimated in its impact assessment[122] accompanying the legislative proposal a reduction in planning and reporting costs for Member States of about EUR 1.2 million.

[120] The Revised Construction Strategy is a mitigation measure to avoid delays and take into account the financial constraints of the Members.
[121] Under this initiative, savings will be made on the part of the ITER Organization. The savings will be calculated on a case-by-case basis.
[122] Commission SWD(2016) 394 final