



Annual Activity Report 2021

DIRECTORATE-GENERAL FOR ENERGY

(DG ENER)

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Energy policy and security of supply have moved even higher up the political agenda since the turn of this year. The Russian invasion of Ukraine as well as the energy price crisis have sharpened the focus on Europe's affordable, secure and clean energy transition.



The clean energy transition is a fundamental component of Europe's future that will also help reducing the EU energy dependency and the exposure to volatile international energy prices. Accounting for 75% of GHG emissions, energy plays a crucial role in the path towards a climate neutral Europe by 2050. The energy transition is necessary to reach our increased target to cut emissions by at least 55% by 2030. Investment in energy efficiency, electrification and renewable energy can help meet these ambitious targets in a cost-efficient way and strengthen our innovation, green technology leadership, jobs and competitiveness.

2021 was a crucial year for energy policy and DG ENER with the adoption of the Green Deal package that proposed a legislative follow up to our new energy strategies. In particular, in 2021 a political agreement was reached by the co-legislators on our first Green Deal legislative proposal on the revision of the Trans-European Networks for Energy Regulation. We also adopted legislative proposals for the revision of Renewables, Energy Efficiency and Energy Efficiency in Buildings directives, of the Hydrogen and Decarbonised Gas package and a new proposal for a regulation to reduce methane emissions in the energy sector. This, together with the assessment of the national Recovery and Resilience Plans, allowed the Commission to confirm its ambitions towards achieving our common 2030 energy and climate targets. This is particularly important in the crisis and recovery context.

Following a year of economic slowdown linked to COVID, the sharp increase of economic activity and energy consumption has led to an energy price crisis that unfolded in the second half of 2021. DG ENER was at the forefront of the Commission reaction to this energy prices crisis and adopted a Communication and Toolbox helping Member States to take immediate actions, both in the short and medium terms.

Following the invasion of Ukraine by Russia and concerns related to energy security in that context, the case for decarbonising our economies by implementing a rapid clean and secure energy transition is stronger and clearer than ever. The key 2021 legislative proposals from DG ENER which aim to accelerate the energy transition will also help reducing our dependence on fossil fuels and Russian gas, while responding to the challenges imposed by the energy price crisis which has been aggravated by the horrific events in Ukraine.

Despite the challenging context, there was no disruption of critical energy supply in 2021 and DG ENER continuously supported national authorities in handling the energy prices crisis and the security related risks. The prompt reaction from the Commission to the energy price crisis that unfolded in 2021 paved the way for the second wave of measures announced in the REPowerEU Communication which was adopted just after the Russian

invasion of Ukraine and was endorsed by the Heads of State and Government in the Versailles summit on 10-11 March 2022.

I wish you an interesting read on how energy policy contributes to the European Green Deal, energy security, affordable prices and a just and sustainable transition.

Ditte Juul Jørgensen

Director-General of DG Energy

THE DG IN BRIEF

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

The EU Treaties together with the Treaty establishing the European Atomic Energy Community (EURATOM Treaty) represent the primary law relevant for the energy sector. Under the Treaty on the Functioning of the European Union (TFEU), energy policy is a shared competence. The EURATOM Treaty is a *lex specialis* in relation to the TFEU, which applies to the nuclear energy sector and covers all policy aspects relevant for the civil use of nuclear energy.



Commission President, Ursula von der Leyen and Commissioner for Energy Kadri Simson.

DG ENER 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 2030 energy and climate targets in view of achieving climate neutrality by 2050.

DG ENER is working to accelerate Europe's clean and just energy transition for it to become the first climate-neutral continent by 2050. We set out policies to develop an innovative, resilient and integrated energy system, delivering a continuous supply of affordable, secure, reliable and clean energy to its citizens and businesses in line with the Green Deal.

The DG strives to remove barriers for energy transition and to stimulate energy solutions, which will drive the shift to climate neutrality whilst promoting Europe's sustainable growth and job creation. The transition will build on consumer participation and market-driven investments in energy efficiency and renewable energy technologies, which will boost EU's global leadership and competitiveness, while reducing its energy dependency and import bills.

Among its other tasks, the DG develops and monitors the implementation of the EU legislative framework for the safe use of nuclear energy, and ensures the wider application of the Euratom Treaty, including nuclear safeguards. It also aims to foster access of EU citizens to high quality radiological and nuclear technologies in medicine, with the highest safety standards. Finally, the DG contributes to the development of fusion energy technologies through the ITER project.

In 2021, the DG defined and ensured sustained progress in achieving the specific objectives set out in its Strategic Plan 2020-2024 which are fully aligned with the European Green Deal while ensuring an appropriate response to the Covid-19 pandemic. The DG also developed a new organisation chart that aligns with the new mission statement and

European Green Deal objectives, and established a new set of values and principles, a management charter and improvements in its working methods.

The main spending programmes in 2021 that supported the work of the DG ENER were:

- Financing the ITER project via the European Joint Undertaking for ITER and the Development of Fusion for Energy (F4E) accounting for more than two thirds of DG ENER's spending in 2020 (71.3% of total spending, or EUR 607.6 million).
- The 'Nuclear Decommissioning Assistance Programmes' for nuclear power plants in Bohunice (Slovakia), Ignalina (Lithuania) and Kozloduy (Bulgaria), accounting for 11% of DG ENER's spending.
- The 'European Energy Programme for Recovery' (EEPR), accounting for around 5.1% of DG ENER's spending. EEPR was established in 2009 to address both Europe's economic crisis and European energy policy objectives.
- Research programmes (the Seventh Framework Programme for Research and Technological Development and Horizon 2020), accounting for 2.2% of DG ENER's spending¹.
- DG ENER's subsidy of EUR 14.8 million (equal to 1.7% of the total payments) to the Agency for the Cooperation of Energy Regulators (ACER).

The Connecting Europe Facility (CEF)-Energy programme is implemented by the European Climate, Infrastructure and Environment Executive Agency (CINEA). At the end of 2021, the Agency managed a portfolio of 52 ongoing actions amounting to EUR 4.2 billion of EU support distributed between the electricity sector, the gas sector, smart grids and cross-border CO2 networks.

The LIFE Clean Energy Transition sub-programme and H2020 legacy on energy efficiency and societal challenges calls are implemented by CINEA. On behalf of DG ENER, in 2021 the Agency managed a portfolio of 201 ongoing projects and services amounting to EUR 355 million addressing market uptake activities and regulatory enhancement support to further enhance energy efficiency measures, local and small-scale renewables deployment, and citizens-led initiatives and mobilisation of private financing in the Clean Energy Transition. In terms of communication and outreach, CINEA supports the organisation of DG ENER's main event, the EU Sustainable Energy Week (EUSEW). The 2021 conference took place in a digital format at the end of October under the theme "*Towards 2030: Reshaping the European Energy System*".

The European Fund for Strategic Investments (EFSI) 2015-2020 finances strategic energy infrastructure, energy efficiency, and renewable energy projects. As of 31 December 2020, a substantial number of EFSI projects had been approved, for a total investment of EUR 313.4 billion, of which EUR 84.5 billion directly targeting the energy sector. The energy

¹ This expenditure only represents a limited share of DG ENER's implication in research programmes. DG ENER contributes to the objectives setting and to the work programme of Cluster 5 "Climate, Energy and Mobility". 98% of the corresponding budget is implemented by CINEA, under the responsibility of DG R&I.

sector ranks second in EFSI infrastructure financing, where it accounts for around 27% of EFSI operations.

The implementation of the specific programmes of the 2021-2027 Multiannual Financial Framework (MFF) started in 2021. Besides the spending programmes mentioned above, DG ENER substantially contributed to the development of InvestEU where DG ENER is co-chairing the Sustainable Infrastructure Window of the Programme, and the development of the Recovery and Resilience Facility, including by developing specific guidance for Member States on the energy related flagships.

During 2021, DG ENER also contributed to the alignment of State aid rules in the field of energy with energy policy, to ensure that the public support provided by Member States for energy projects truly supports the objective of the European Green Deal. As for guiding private financing to energy projects, DG ENER contributed to the development of the sustainable finance framework, and in particular to the development of technical screening criteria for energy and buildings under the EU taxonomy.

On 31 December 2021, DG ENER had **612 staff** in place, including external staff (contract agents and SNEs). Three Directorates (A, B and C), are based **in Brussels**, which is around half of the staff of the DG: they deal with energy policy coordination and related statistical and economic analysis, international relations, inter-institutional and communication aspects, strategic planning and legal affairs, just transition, consumers, energy efficiency, energy security and safety, digitalisation, and research and innovation, green transition, renewables, sustainable energy sources, internal energy market and infrastructure. 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, safe management of spent fuel and radioactive waste, safe decommissioning, radiation protection and management of the ITER project, as well as nuclear safeguards.

DG ENER activities are supported by the 'Shared Resources Directorate' (SRD), shared with and administratively assigned to DG MOVE. In 2021, the SRD had 87 staff in Brussels, dealing with assurance and supervision, IT development and systems, logistics and document management, data protection and business continuity coordination, budget and financial management.

The work of the DG is also supported by the European Climate, Infrastructure and Environment Executive Agency (CINEA); by the regulatory Agency for the Cooperation of Energy Regulators (ACER), by the F4E Joint Undertaking² and by Euratom Supply Agency (ESA).

² Additional details of the functioning of CINEA, ACER and F4E JU are covered in Annex 7 to the AAR.

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 constitute the basis on which the College takes political responsibility for its decisions as well as for the coordinating, executive and management functions it exercises, as laid down in the Treaties³.

A. Key results and progress towards achieving the Commission's general objectives and DG's specific objectives (executive summary of section 1)

The unprecedented COVID-19 crisis has deeply disrupted the economies in the European Union (EU) and those of external trading partners. It has affected global trade and supply chains, impacting the pace and scale of investments and the energy market. Equally, the demand side has been affected. As a result, following a year of economic slowdown, the sharp increase of economic activity and energy consumption has led to an energy price crisis that unfolded in the second half of 2021.

In 2021, Member States and the EU authorities started taking measures with the aim of mitigating the impact energy prices increase on the economy and vulnerable citizens while ensuring that climate action remains a key priority. The European Green Deal is Europe's strategy for how to achieve climate neutrality by 2050. It is also Europe's new growth strategy and will help the EU economy recover from the COVID-19 crisis by creating jobs and making Europe more competitive globally. The energy transition is a central element in this growth and competitiveness strategy.

Therefore, DG ENER launched in 2021 its new legislative proposals based on the strategic vision for the period 2020-24 to fully support through its actions, policies and instruments the **European Green Deal for the European Union (EU) and its citizens** while **providing a rapid response to the impacts of the COVID-19 and energy prices crisis**.

Key achievements 2021 grouped by the five specific objectives of the DG's Strategic Plan 2020-2024:

Specific Objective 1: Energy is clean, affordable and secure *by fostering a decarbonised energy production and use in the EU that contributes to economic recovery and increased climate ambition. It also relies on a well-functioning and secure internal energy market, fit for decarbonisation where progress is monitored through the Energy Union Governance.*

Under Specific Objective 1, the key achievement for DG ENER was to set out a vision on how to accelerate the transition towards a more integrated energy system in Europe, with

³ Article 17(1) of the Treaty on European Union

the aim of enabling the decarbonisation of the energy system by overcoming the current compartmentalised system which is built on vertical energy value chains. This vision materialised with the adoption of the Green Deal legislative proposals on the revision of Renewables, Energy Efficiency and Energy Performance of Buildings directives, of the Hydrogen and Decarbonised Gas package and a new legislative proposal for a regulation to reduce methane emissions in the energy sector. This vision is also reflected in the political agreement on the revised Trans-European Networks for Energy Regulation. In addition to delivering several key legislative proposals, DG ENER contributed substantially to the assessment of the national Recovery and Resilience Plans, where energy efficiency (notably energy efficiency in public and residential buildings) and clean power (renewable energy and networks) account, respectively, for 29% (EUR 64.4 billion) and 12% (EUR 26.7 billion) of the total green expenditure under the 22 approved plans, that allowed the Commission to confirm its ambitions towards achieving our common 2030 energy and climate targets. Towards the end of the year, DG ENER was at the forefront of the Commission reaction to the energy prices crisis which led to the adoption of a Communication and Toolbox helping Member States to take appropriate actions. This also included the reinforcement of the EU framework on security of gas supply as part of the Hydrogen and Decarbonised Gas package. Finally, DG ENER substantially contributed to the adoption of the Complementary Delegated Act for EU Taxonomy, covering natural gas and nuclear activities to help channel funding into decarbonisation.

Specific Objective 2: Buildings and renovations are performed in an energy and resource efficient way and the **Energy Efficiency First** principle is applied in investment decisions on energy infrastructure in the Union.

In the area of energy efficiency, the year 2021 was marked by several developments which culminated with the adoption of the revision of the Energy Efficiency and Energy Performance of Buildings Directives. DG ENER developed guidelines and tools on the application of the Energy Efficiency First principle to be considered in all energy policy initiatives and across other areas of policymaking, as appropriate, when energy consumption is at stake. To support Member States in their building renovation efforts, the Commission published its analysis of the received 26 Long-Term Renovation Strategies across the focus areas of the Renovation Wave, identifying best practices⁴. As regards product efficiency policy, one of the main achievements of the year was the successful launch of revised and modernised EU Energy and Tyre labels for a total of 7 product groups and the related, partial launch of the public interface of the European Product Registry for Energy Labelling (EPREL), allowing consumers across the EU to look up product details via QR codes on the new labels. The Horizon Europe Built4People co-programmed partnership on promoting research and innovation on a highly-energy efficient, climate neutral and sustainable built environment was officially launched with the signing in October 2021 of the Memorandum of Understanding (MoU) between the Commission and partners⁵ other than the Union, and the first two Partnership board meetings.

⁴ (SWD(2021) 365 final)

⁵ The Built4People Partners are the European Construction, built environment and energy efficient building Technology Platform (ECTP) and the European Regional Network of the World Green Building Council.

Specific Objective 3: Research is mobilised and innovation fostered *by designing a modern EU energy system that relies on clean energy technologies and digitalisation.*

Under this specific objective, DG ENER contributed to the preparation and adoption of the first Horizon Europe Work Programme (2021-22) and the launch of its first missions (notably the Cities Mission). DG ENER also reinforced the Strategic Energy Technology Plan (SET Plan), by better aligning the Implementation Working Groups (IWG) activities to the European Green Deal objectives. Furthermore, DG ENER published its second annual Competitiveness Progress Report in October 2021 as part of the State of the Energy Union, to assess the competitiveness of the EU in the development and deployment of clean energy technologies. Efforts were also made to reinforce international clean energy technology collaboration, in particular through activities under the umbrella of the International Energy Agency, the Clean Energy Ministerial, and Mission Innovation.

Specific Objective 4: All stakeholders are involved and a just transition is ensured *by enabling energy consumers to be at the heart of the clean energy transition, ensuring that no one is left behind, and building on the European Climate Pact.*

Important progress was made regarding the Clean Energy enabling framework. DG ENER contributed to ensuring a **just transition in EU coal, peat and oil shale regions**. This included helping Member States to design their planning for Just Transition Mechanism that includes supporting new socio-economic opportunities in these regions also via energy-related investments (START programme, Exchange programme). The **Covenant of Mayors** launched a new chapter of its history, with a renewed ambition, aligned on the 2030 and 2050 energy and climate goals of the Green Deal. 2021 was also marked by the preparatory work for the launch of **Energy Poverty Advisory Hub (EPAH)** and the launch of phase II of the **‘Clean Energy for EU Islands Initiative’**.

Specific Objective 5: The EU acts as energy global leader *by contributing to an increased ambition for clean energy to be produced and used in third countries.*

In 2021, DG ENER continued to develop and implement the external dimension of the European Green Deal in the energy field in its relations with third partners at regional and bilateral level and through its engagement in international organisations and multilateral fora, in line with the Council Conclusions on Climate and Energy Diplomacy of 25 January 2021. Despite the global COVID-19 pandemic, dynamics continued to improve in many areas.

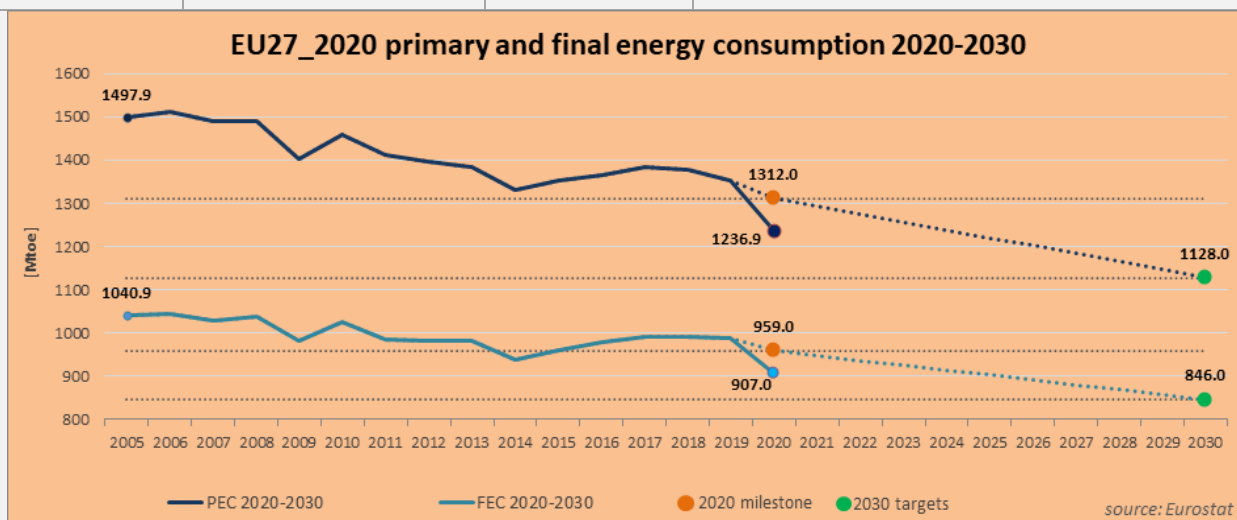
The main achievements include progress in the regional cooperation with the Southern Neighbourhood and Africa; the completion of the Southern Gas Corridor; a successful Energy Community Ministerial Council meeting with the adoption of the Clean Energy Package and the Decarbonisation Roadmap; successful contributions to the implementation for the Trade and Cooperation Agreement with the United Kingdom, as well as the adoption of the administrative arrangements effectively implementing the Agreement between the United Kingdom and the European Atomic Community for cooperation on the safe and peaceful uses of nuclear energy based on which bilateral energy relations will be developed; successful completion of the stress tests peer review for the Astravets nuclear power plant in Belarus providing certain additional assurances regarding the nuclear safety

of this plant situated close to the EU's border; active engagement in the UN High Level Energy Dialogue and in the COP26 which culminated with the adoption of the Global Methane Pledge, and in the works of the International Atomic Energy Agency and of the International Energy Agency, as well as an increasing drive towards clean energy policies within the EU-China energy cooperation.

B. Key Performance Indicators (KPIs)

1. Final Energy Consumption (FEC)

Baseline (2017)	Interim milestone (2020)	Target (2030)	Latest known results (2021)
988 Mtoe ⁶ (for EU27_2020)	959 Mtoe (for EU27_2020) by 2020	846 Mtoe (for EU27_2020) by 2030	In 2020, the final energy consumption (907 Mtoe) of the Union (EU27_2020) was 5.4% below the final energy consumption milestone of 959 Mtoe targeted for 2020. A significant part of the drop of FEC recorded in 2020 is related to the impact of COVID-19. In 2021 a rebound of the energy consumption is expected.



2. Completion of EU Market Coupling

Baseline (2019)	Interim milestone (2022)	Target (2024)	Latest known results (2021)
Market coupling for electricity not completed (notably in East Europe). 19 Member States coupled to the pan-EU day-ahead market; 22 coupled to the pan-EU	All Member States with interconnector to be coupled for day-ahead electricity trading.	All Member States with interconnector coupled for day-ahead electricity trading, with all their	<u>2020/21 achievements for day-ahead coupling:</u> <ul style="list-style-type: none"> December 20: Greece coupled January 21: Great Britain bidding zones and interconnectors with EU exiting Single Day-ahead Coupling May 21: Bulgaria coupled June 21: Czech-Republic, Slovakia, Hungary and Romania coupled with the rest of the EU market.

⁶ Million Tonnes of Oil Equivalent

intraday market.		borders.	<ul style="list-style-type: none"> • October 21: Bulgaria-Romania border coupled. Only the Croatian-Hungarian border remains uncoupled <p><u>Achievements in 2021 for intraday coupling:</u></p> <ul style="list-style-type: none"> • Coupling of Italy in September. • Only Slovakia and Greece remain uncoupled.
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3. National Energy and Climate Plans (NECPs) implement European Green Deal and EU post-2020 energy and climate goals, and thereby contribute to economic recovery

Baseline (2019)	Interim milestone (2023)	Target (2024)	Latest known results (2021)
Final NECPs detailing existing and additional policies and measures to be implemented in the period 2020-30.	100% of the policies and measures introduced by MS, reflected in their NECP and Integrated Progress Reports, are in line with the European Green Deal objectives and contribute to the economic recovery.	100% of the policies and measures introduced by MS in their revised NECPs to be submitted by June 2024 are in line with the European Green Deal objectives and contribute to the economic recovery.	<p>Substantial progress: The 2021 State of the Energy Union report evidenced the progress in the implementation of the EU energy and climate policies.</p> <p>In 2020, EU GHG emissions were down 31 % due to COVID-19 impact and continued decarbonisation trends.</p> <p>Renewables overtook fossil fuels as the EU's main power source. EU as a whole exceeded the renewable target by 2020 in 2 percentage points reaching 22.1%. All Member States individually, achieved their 2020 renewables targets, except France. Considering the higher ambition, the deployment of renewables needs to go at a faster pace.</p> <p>In 2020, the impacts of the COVID-19 crisis led to a substantial drop in energy consumption enough to meet the 2020 targets for both primary and final energy consumption. In 2020, primary energy consumption in the EU was 5.8% below the 2020 energy target. Final energy consumption was 5.4% below the 2020 energy target. Both primary and final energy consumption decreased in all EU Member States.</p> <p>The pace towards the 2030 targets shows that additional efforts need to be done. The figures of 2020 are 9.6% above the 2030 target for primary energy consumption and 7.2% above, the 2030 target final energy consumption target</p>

4. Estimated risk at closure

Baseline (2019)	Interim milestone (2022)	Target (2024)	Latest known results (2021)
0.1%	< 2% of relevant expenditure	< 2% of relevant expenditure	The estimated overall risk at closure represented 0.29% of the DG's total relevant expenditure for 2021

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, 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.

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

In line with the Commission's Internal Control Framework DG ENER has assessed its internal control system during the reporting year and has concluded that it is effective and the components and principles are present and functioning well overall, except for principles 10 and 11, for which minor deficiencies were identified. As a consequence component III (Control activities) is considered as partially effective. Please refer to Section 2.1.3 for further details.

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

In conclusion, DG ENER's 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. Improvements are necessary concerning the effectiveness of internal control principles 10 (Control Activities) and 11 (Controls over IT). The following actions are taken in this respect: the implementation of the Internal Audit Service recommendations on the supervision of the EU acquis and the completion of the IT Security plans. The Director-General, in her capacity as Authorising Officer by Delegation has signed the Declaration of Assurance.

D. Provision of information to the Commissioner(s)

In the context of the regular meetings during the year between the DG and the Commissioner on management matters, the main elements of this report and assurance declaration, have been brought to the attention of Commissioner Simson, responsible for energy.

1. KEY RESULTS and progress towards achieving the Commission's general objectives and DG's specific objectives

The strategic vision of DG ENER for the period 2020-24⁷ is to fully support through its actions, policies and instruments the **European Green Deal for the European Union (EU) and its citizens** while **providing a rapid response to the impacts of the COVID-19, energy prices and geopolitical crises**. With the production and use of energy across economic sectors accounting around 75% of the EU's greenhouse gas emissions, further **decarbonising the energy system is critical to reaching the energy and climate objectives in 2030, clean energy transition and climate neutrality by 2050, as well as the economic benefits of the transition in terms of growth, job creation and competitiveness**.

In line with the European Green Deal Communication and DG ENER Strategic Plan 2020-24, the **five specific objectives** have been defined to meet the European Green Deal overarching ambitions while ensuring a just transition. The overall challenge for EU Energy Policy is therefore to set the foundations for an energy system fostering a climate-neutral Europe by 2050 while ensuring a **sustainable, affordable and secure energy system and leaving no one behind**. Such transition will require **significant investments**. Therefore, mobilising both the public and private sector will be a priority for DG ENER under all of its specific objectives. There are various actions taken by DG ENER in this sense, some targeting a specific objective, other more horizontal covering several or all objectives (e.g. DG ENER contribution to the alignment of the State aid rules for energy to the energy policy and to the objective of the EU Green Deal, or its contribution to the development of taxonomy and sustainable finance in the field of energy).

In 2021, it was crucial to launch the European Green Deal legislative proposals and actions across our economy while at the same time supporting economic recovery in the context of the COVID-19 and the energy prices crises. In this spirit, as highlighted in the European Green Deal Communication and the Commission Work Programme 2021, DG ENER put forward legislative proposals on the revision of **Renewables, Energy Efficiency and Energy Performance of Buildings directives**, of the **Hydrogen and Decarbonised Gas package** and a new legislative proposal on **methane emissions**.

DG ENER also contributed to the assessment of the **national Recovery and Resilience Plans** and towards the end of the year, DG ENER was at the forefront of the Commission reaction to the **energy prices crisis** which led to the adoption of a **Communication and Toolbox** helping Member States to take appropriate actions.

Progress made on meeting the objectives of the 2020 and **2030 Energy and Climate Policy Framework** was further assessed in the context of the **sixth State of the Energy Union report**.

⁷ Strategic Plan 2020-2024, DG ENER, available at: https://ec.europa.eu/info/system/files/ener_sp_2020_2024_en.pdf

None of the significant risks for the DG identified in the Annual Management Plan 2021 materialised in the course of 2021.

1.1 Specific Objective 1: **Energy is clean, affordable and secure** by fostering a decarbonised energy production and use in the EU that contributes to economic recovery and increased climate ambition. It relies on a well-functioning and secure internal energy market, fit for decarbonisation where progress is monitored through the Energy Union Governance.

The COVID-19 and the energy prices crises had a significant impact on the overall economy, including on investments in the energy sector. Negative impacts are likely to continue well into the next years and the energy transition might slow down without an appropriate response. Therefore, the European Commission adopted a **Recovery plan with a central role for the green and digital transitions**. The proposed plan sees a front-loaded financial response channelled through various financial instruments.

In order to identify **investments and project pipelines** that are relevant for funding under these recovery plan financial instruments, and for achieving the objective of supplying clean, affordable and secure energy, DG ENER worked closely with Member States and, where relevant, regions. This included supporting the Commission exchanges on the national **Recovery and Resilience Plans**, discussions on the implementation of **National Energy and Climate Plans**, the follow up and assessment of the **Long-Term Renovation Strategies** and the development of **territorial Just Transition Plans**. Where required, this included **contributions to the shaping and assessment of Member States' final national Recovery and Resilience Plans**, and **investments in technical support and capacity building** in cooperation with other concerned Directorates-General (for instance DG REFORM).

The **Recovery and Resilience Facility (RRF)** is one of the most important sources for funding energy projects within the current EU budget. DG ENER contributed to the preparation of the energy modules and flagships, including the preparation of guidance for Member States on how to support energy projects under RRF while respecting the 'Do No Significant Harm' principle.

Another important EU programme supporting energy project is **InvestEU**. DG ENER contributed to defining the InvestEU Programme with financial products and advisory initiatives, in particular for the Sustainable Infrastructure Window of the Programme and in the selection of the investment partners and advisory partners.

DG ENER also **intensified the dialogue with institutional investors and financial institutions** (such as the European Investment Bank and the European Bank for Reconstruction and Development).

Clean energy

Clean energy is at the heart of the energy transition. The EU aims at getting 40% of its final energy consumption from renewable sources by 2030 in line with the increased

targets set out in the 2030 Climate Target Plan. In 2021, several initiatives contributed to the achievement of specific objective 1.

In the context of the 2030 increased climate ambition and following up on the abovementioned initiatives, the Commission adopted in July a **legislative proposal revising the Renewable Energy Directive (REDII)** in order to align it with the increased ambition of the European Green Deal. The proposal includes a revised EU target of 40% Renewable Energy Sources (RES), new sectoral targets and measures to enable a more integrated energy system largely supplied by renewables, and to strengthen sustainability requirements for the production and use of bioenergy. Preparatory work entailed a two-stage public consultation including stakeholder events, the preparation of an impact assessment based on modelling and underpinning the policy choices. Renewables were also mainstreamed in other relevant legislative proposals including in particular the energy efficiency, energy performance of buildings and energy taxation directives and the EU initiatives for maritime and aviation.

The Commission adopted delegated acts on the **European Renewable Development Platform**, which aims to facilitate statistical transfers between Member States, on a methodology for renewable cooling accounting, as well as on the selection of renewable energy cross-border projects under the Connecting Europe Facility.

The Commission worked with Member States on the achievement of the binding national targets for 2020. Based on preliminary statistical data, reaching the EU target of 20% renewables in 2020 – set in 2009 – could be confirmed. The EU renewable energy financing mechanism, which supports cost-effective achievement of individual and collective energy targets, began operation.

The Commission followed up on its **energy system integration strategy and its hydrogen strategy**, which contain 60 measures to create an integrated energy system and explored the potential of clean hydrogen to achieve a climate-neutral economy and establish European competitiveness in related technologies. The Commission **reviewed the internal gas market legislation** and adopted in December a legislative proposal to facilitate the uptake of renewable and low-carbon gases and the development of an EU market for hydrogen.

As a follow-up to the 2020 **EU Methane Strategy** and its international commitments, the Commission adopted in December a **proposal for a Regulation on methane emissions reductions in the energy sector**. The proposal requires the oil, gas and coal sectors to measure, report and verify methane emissions, and includes strict rules to detect and repair methane leaks and to limit venting and flaring. Furthermore, it sets information and transparency obligations concerning methane emissions related to imported fossil fuels into the EU. More specifically, it requires importers to submit information about how their suppliers perform measurement, reporting and verification of their emissions and how they mitigate those emissions. In addition, it tasks the Commission with establishing two transparency tools that will show the performance and reduction efforts of countries and energy companies across the globe in curbing their methane emissions: a methane transparency database and a global monitoring tool. In parallel, the Commission continued the international engagement on this issue. At the COP26 UN Climate Conference, the

Commission launched the Global Methane Pledge in partnership with the United States, whereby over 100 countries committed to reduce their methane emissions by 30% by 2030 compared to 2020 levels.

Affordable energy

Promoting the benefits of the world's largest cross-border electricity and gas markets and further developing cross-border energy trade remained a core priority for 2021. Completing the internal electricity market represents the most cost-effective way to ensure secure and affordable electricity supplies to EU citizens and hence to meet the objectives set by the European Green Deal. The aim is to ensure a functioning market with fair market access, a high level of consumer participation and protection, high shares of fully integrated renewable electricity production, as well as adequate levels of interconnection and flexible generation capacity.

On the regulatory framework ("software"), the focus in 2021 was working together with Agency for the Cooperation of Energy Regulators (ACER), with Member States and regulatory authorities on the **implementation of the new electricity market design and the underlying network codes and guidelines**. DG ENER continued to moderate and provide legal and policy advice to EU energy regulators on how to jointly develop the more than 100 common methodologies which are required under the updated EU energy market legislation to reduce barriers to cross-border electricity trade. ACER fulfilled its mandate to support the integration of the EU energy market, monitor its functioning and advise the EU Institutions.

In the context of the Commission's supervision of State interventions into energy markets, DG ENER continued to prepare the **Commission's opinions** on the necessary **national market reforms** which are required before introducing a capacity mechanism. ENER also initiated a systematic assessment of public interventions in retail price setting of electricity notified by Member States under the recast Electricity Directive. Furthermore, in 2021, ENER steered the preparation for **implementing acts** on access to data and **data interoperability**⁸. The first series of implementing acts focused on metering and consumption data. DG ENER started with the preparation of a Network Code on demand side flexibility.

On the regulatory framework for gas, the Commission adopted the **Hydrogen and Decarbonised Gas Package**. It contains a Directive and a Regulation and is accompanied by a detailed Impact Assessment supporting the policy proposals. The package aims at the facilitation of the uptake of low-carbon and renewable gases, including hydrogen. It is an integral part of the Green Deal package and proposes legislation which would ensure the necessary markets, networks and infrastructure are in place for their increased deployment. In this way, the package should make an important contribution to the realisation of Europe's decarbonisation objectives. It should also positively contribute to security of supply, as increased production of low-carbon and renewable gases will make Europe less dependent on gas imports. The proposals put forward a new, dedicated framework for the

⁸ In accordance with article 24 of the Electricity Directive (EU) 2019/944

development of an EU hydrogen market. Furthermore, they introduce rules to manage gas quality in view of the increased production of hydrogen and other low-carbon and renewable gases, maintaining thus the integrity of the internal market.

On infrastructure ("hardware"), modern trans-European energy infrastructure is crucial for the EU to integrate its energy market and to meet its energy and climate goals. By identifying projects of common interest and offering them a coherent regulatory framework, the EU lays the foundation for ensuring that these objectives are reached in an efficient way by carrying out the infrastructure projects which are considered vital for Europe. In 2021, the Commission followed up on the **legislative proposal for a revised TEN-E Regulation and contributed to the negotiations with the co-legislators reaching a political agreement in December 2021**. By removing fossil fuel infrastructure from its scope and adding new infrastructure categories such as hydrogen and by reinforced provisions on offshore grid infrastructure, the revised TEN-E Regulation will make an important contribution to achieving the Green Deal objectives. The Commission has also finalised and adopted the 5th Union list of projects of common interest (PCIs), the last of such lists under the current TEN-E Regulation.

The Commission continued working on the **implementation of the revised Connecting Europe Facility (CEF)**, adopted the first multi-annual work programme covering the years 2021-2023 and launched the first call for proposals for PCIs in 2021 with an indicative budget of EUR 785 million. CEF actions will foster the integration of renewables, the EU's internal market, and energy security. At the end of 2021, CINEA managed a portfolio of 52 ongoing actions amounting to EUR 4.2 billion of EU support distributed between the electricity sector, the gas sector, smart grids and cross-border CO₂ networks.

Secure energy

The security and safety of the Union's energy system are a precondition for both the economic recovery and the acceptance and success of the energy transition required by the European Green Deal. DG ENER integrated the lessons from the COVID-19 crisis in the energy sector by continuing its support to exchange energy security **good practices to address the different risks associated with a pandemic**.

DG ENER continued supporting Member States to ensure the implementation of the **Regulation on risk-preparedness** in the electricity sector, in particular by organising the review, by the Electricity Coordination Group, of the draft national risk-preparedness plans. It also updated the mandate and composition of the **Electricity Coordination Group**. A critical factor to ensure security of supply in the transition towards decentralised and variable renewable sources is energy storage. DG ENER followed up to the resolution of the European Parliament and the study published in May 2020 on the subject.

DG ENER pursued its work to ensure a proper implementation of the Security of Gas Supply Regulation. To help Member States put in place the necessary measures to provide solidarity gas in extreme crises, DG ENER worked on **a Commission decision establishing a blueprint for gas solidarity arrangements**. The Commission supported the regional analysis groups for their update of the regional risk assessments in order to prepare the review of the National Preventive Action and Emergency Plans in 2022.

DG ENER also contributed to implement the Security Union and the cybersecurity strategies adopted in 2020. To do so, DG ENER completed the initial procedural steps for a delegated act establishing a **Network Code on the cybersecurity** of the cross-border electricity flows. DG ENER also launched an impact assessment and targeted consultations in view of a new **initiative on the protection and cybersecurity of critical energy infrastructure** in 2022.

DG ENER contributed to implement the Regulation on the **Screening of Foreign investments** to make sure investments do not harm energy security. It further helped reinforcing the strategic autonomy and energy sovereignty of the Union by actions to **strengthen the resilience of critical supply chains** of energy technologies, the first step being an analysis of critical supply chains and possible measures to reinforce their resilience.

In the field of **nuclear energy**, the Commission pursued its work to ensure safe and secure exploitation of this low carbon form of energy production in those Member States choosing this energy source. In 2021, about 40% of the total **low carbon electricity** in the EU was produced by nuclear power, which constitutes approximately 25% of the total EU electricity production. In conformity with the Commission's policy priorities on the safety of nuclear and radiation technologies, work continued in 2021 to ensure that **the Euratom legal framework on nuclear safety, radioactive waste management and radiation protection** was correctly and effectively transposed and implemented in the EU Member States. In particular, work continued to ensure the effective transposition of the revised Basic Safety Standards (BSS) Directive into Member States' national framework, and the infringements were pursued when necessary. Based on Member States' national reports (submitted in 2020), DG ENER prepared the second Commission report to the European Parliament (EP) and the Council on the implementation of the amended Nuclear Safety Directive (expected to be adopted in 2022). DG ENER also proceeded to the analysis of Member States' national reports on radioactive waste management and shipments of radioactive waste, and to the preparation of the Commission's reports to the EP and the Council (foreseen for 2022).

DG ENER maintained its close collaboration with Member States' regulatory authorities within the European Nuclear Safety Regulators Group (ENSREG), including on the preparation of the **second EU Topical Peer Review (TPR)** on fire protection under the amended Nuclear Safety Directive (NSD), **in order to support the highest standards of nuclear safety in the EU**.

In 2021, DG ENER organised the **first EU Workshop on SMRs (Small Modular Reactors)**, which was attended by more than 110 participants representing European political, industrial, regulatory and financial stakeholders, to support the development of potential new technologies with a view to decarbonisation.

The Commission formalised an existing **expert group** with a mandate that covers both **financing of decommissioning and disposal of radioactive waste**. This is in response to the challenges facing the European Union and its Member States with regard to the back-end of the nuclear fuel cycle.

The **Nuclear Decommissioning Assistance Programmes** (NDAP) progressed overall well, despite some management and technical issues that created challenges for the schedule of some projects. This in particular resulted in the revision of the overall end-date of one of the three programmes. The other two programmes may face similar issues. Mitigation measures (e.g. acceleration of the schedule of critical projects and tighter monitoring) are being implemented. The programme implementation over the period 2014-2020 will be subject to an ex-post assessment to be published in 2022. The decommissioning operators have taken the first steps towards the new objective of knowledge dissemination, delivering one knowledge product per site as a first step in the planned build-up of a comprehensive knowledge base on decommissioning best practices being developed by JRC for use across the EU. The Commission adopted the financing decision and the associated Work Programmes for 2021 and 2022 in line with the new Council Regulations 2021/100 and 2021/101.

In the field of **nuclear emergency preparedness and response (EPR)**, DG ENER continued to operate the ECURIE system for the exchange of urgent information in case of a radiological emergency and the EURDEP system for the exchange of radiation monitoring data.

The Covid-19 pandemic continued to have a significant impact on all areas of **Euratom safeguards**, but particularly on Euratom inspectors traveling under COVID-19 conditions. DG ENER addressed the situation by continuing its risk-based approach, now formalised by a new Staff Working Document on the Implementation of Euratom Safeguards, adopted in 2021. This brought back the share of nuclear materials under full Euratom safeguards to the pre-COVID-19 level of 99.95%.

Energy strategy and implementation

In 2021, strategic energy policy development and foresight continued to play a central role in the implementation of the Clean Energy Package and in the clean energy transition as outlined in the European Green Deal, but also in recovery and enhanced resilience following the outbreak of the Covid-19 pandemic.

As regards implementation, and in the context of the Regulation on the **Governance of the Energy Union**, the Commission assessed the first progress reports on the final **National Energy and Climate Plans (NECPs)** and followed up on the guidance issued to Member States in 2020. In autumn of 2021, overall progress made was assessed in the context of the 2021 **State of the Energy Union report**, which was accompanied by comprehensive analyses of various areas of energy policy.

DG ENER continued preparations of the implementing act on **integrated national energy and climate progress reports** with the **Energy Union Committee**, which is also in charge, along with the Climate Change Committee, of the implementation of the Governance of the Energy Union. In this regard, DG ENER launched the e-reporting platform of the Governance Regulation together with DG CLIMA, SG and the European Environment Agency (EEA) and received the first reports in March 2021.

In 2021, DG ENER continued to ensure the effective implementation of the EU-UK Withdrawal Agreement, notably Title IX of the agreement on Euratom related issues and the Protocol on Ireland/Northern Ireland. This included the transposition and implementation of the relevant parts of the Clean Energy Package in Northern Ireland. Regarding the future relationship with the United Kingdom, ENER advanced work to implement both the new Euratom-UK Agreement for Cooperation on the Safe and Peaceful Uses of Nuclear Energy and the relevant provisions of the Title on Energy and its chapter on Raw Materials in the Trade and Cooperation Agreement.

DG ENER continued its enhanced work on planning, monitoring and reporting arrangements in order to ensure that the intended purposes are timely achieved, with regard to both the policy and the management dimension.

DG ENER strengthened its work with Member States. In this respect, DG ENER's internal country coordinators network continued to monitor the **implementation of the Energy Union** in the Member States, and prepared input on energy in the context of the **Recovery and Resilience Plans**. A Task Force on Recovery has been set up in June 2020 involving DG ENER country coordinators network and sectorial units. The DG ENER Task Force provided the overall coordination of the recovery exercise and ensured that energy priority reforms and investments are included in the national Recovery and Resilience Plans, to tap into the up to EUR 250 billion available within the time frame of 2021-2023 for climate relevant measures under the Recovery and Resilience Facility.

DG ENER continued to support Member States in their implementation of the existing energy and Euratom 'acquis'. This included analysis by DG ENER of the notification by Member States of the transposition of the energy acquis followed by dialogues with the Member States. Workshops and meetings on Better Regulation, the policy cycle and specific aspects of the legislation were organised, including through the 'Concerted Action' programmes. Work on the enforcement of energy acquis continued and, when necessary, **formal infringement procedures** were launched. In 2021, DG ENER's enforcement work resulted in the adoption of 149 infringement decisions: 72 closures; 56 letters of formal notice and 21 reasoned opinions. In order to assist Member States to correctly implement and apply EU energy law, DG ENER held so-called package meetings with three Member States (Croatia, Belgium and Slovenia), during which all pending infringement cases with the respective Member State were discussed. In addition, DG ENER launched 39 new EU Pilot requests for ensuring compliance with the energy acquis; it also provided assistance on the assessment of the pending EU Pilot information requests and on numerous complaints. Legal support and advice, revision of legal texts and management of infringements as well as supporting the implementation of **better regulation practices** within the DG, such as the use of evaluations and impact assessments, remained crucial work streams. DG ENER also implemented a new "Active Planning" approach in order to ameliorate its ability to anticipate and ensure a swift and smooth implementation of policy priorities.

In 2021, DG ENER continued to mainstream equality, diversity and gender equality in its policy steering and actions, including with the completion of the first ever comprehensive **inventory of women in the EU energy sector** and the official launching of the **Equality Platform in the Energy Sector**, designed to gather companies and organisations

committed to improve women employment and greater diversity in Europe's energy sector. The EU diversity and equality values in energy were promoted in **international events and partnerships** were forged with other key international organisations.

1.2 Specific Objective 2: **Buildings and renovations** are performed in an energy and resource efficient way and the **Energy Efficiency First principle** is applied in investment decisions on energy infrastructure in the Union

Prioritising energy efficiency in all stages of the energy chain from generation to final consumption helps to decarbonise the whole energy system in a cost-effective way, a key prerequisite of reaching the Union's climate objectives. It also helps improving access to affordable, secure, reliable and clean energy for all Europeans.

Energy efficiency

A key deliverable for 2021 was the adoption of a legislative proposal for **revising the Energy Efficiency Directive (EED)**, as announced in the European Green Deal and confirmed in the Climate Target Plan and Commission Work Programme 2021. The proposal for a recast of the Energy Efficiency Directive aims at further mobilising the EU efforts to promote energy efficiency and achieve energy savings to reach a higher climate target of at least 55% by 2030, in view of achieving Union's decarbonisation objectives. The revised EED introduces an increased and binding at EU level, headline target for reducing energy consumption by 9%⁹, accompanied by indicative national contributions which need to be set taking into account a formula constituting of a set of criteria. The 9% reduction equals the 36% for final and 39% for primary energy consumption compared to the 2007 Reference Scenario projections which has been the baseline until now. The new directive also proposes to increase the energy savings obligation in end use to 1.5% annually as of 2024. In addition, the proposal introduces strengthened provisions for the exemplary role of public sector through the reduction of energy consumption, extended scope of renovation obligation and a more systematic application of energy efficiency requirements in public procurement.

The Commission also developed guidelines and tools on the **Energy Efficiency First principle** to make it operational throughout the energy system, which were published in September 2021. The principle should be applied in all energy policy initiatives and across other areas of policymaking, as appropriate. Its application will help identifying sustainable solutions across sectors from a wider societal perspective in view of achieve decarbonisation at the lowest possible cost, thereby contributing to reducing GHG emissions and to improving air quality and health.

In addition to the new requirement in the EED proposal to apply the Energy Efficiency First principle in policy planning and investment decisions, it is important to support the

⁹ Compared to the projections of the 2020 Reference Scenario (787 Mtoe in final and 1023 Mtoe primary energy consumption respectively). This corresponds to a reduction of 36% for FEC and 39% for PEC compared to the 2007 Reference Scenario.

upscaling and mainstreaming of **energy efficiency investments** under the European Green Deal Investment Plan and under the Renovation Wave. To this end, the Commission developed dedicated financing products and advisory services under InvestEU, as well as the LIFE Clean Energy Transition sub-programme, to be implemented in the MFF 2021-2027, and adopted the related 2021-2024 Multi-Annual Work Programme. The Commission also provided guidance to Member States, financial institutions, project promoters and beneficiaries on how they could use the EU funds efficiently in the framework of the MFF 2021-2027 and the EU Recovery package. Specific guidance was provided to member States on how to use the funds made available to them under the RRF to support buildings renovation.

The **European Local Energy Assistance (ELENA)** facility was reinforced with its integration into the InvestEU Advisory Hub and additional support from the LIFE Clean Energy Transition sub-programme. New ELENA projects receiving project development assistance (PDA) were approved in 2021. Moreover, the Commission, together with the European Investment Bank (EIB), continued helping Member States to design and implement national, regional and local programmes replicating the ELENA model that supports the implementation of energy efficiency investments under the different EU funding programmes.

When it comes to steer financial institutions in support to energy efficiency, 2021 was a remarkable year for the activities of the **Energy Efficiency Financial Institutions Group (EEFIG)**, steered by the Commission with the collaboration from the **United National Environmental Programme Financial Initiative (UNEP FI)**. EEFIG delivered four reports on energy efficiency, covering: the evolution of financing practices; potential improvements in industry; multiple benefits of energy efficiency and the risk assessment of energy efficiency loans and underlying assets. In parallel, the user interface of the De-Risking Energy Efficiency Platform (DEEP) was improved, while the platform is continuously enriched with data from additional energy efficiency projects.

As regards the **Sustainable Energy Investment Forums**, national roundtables on energy efficiency finance have been organised in Croatia, Finland, Hungary and Belgium (a series of four workshops and a conference).

Buildings and products

In line with the Renovation Wave strategy, a main achievement of the year 2021 was the adoption of the **proposal for a recast of the Energy Performance of Buildings Directive**, supported by an Impact Assessment, which was adopted on 15th December 2021, together with the **massive development of the “renovate” component** of the national recovery and resilience plans.

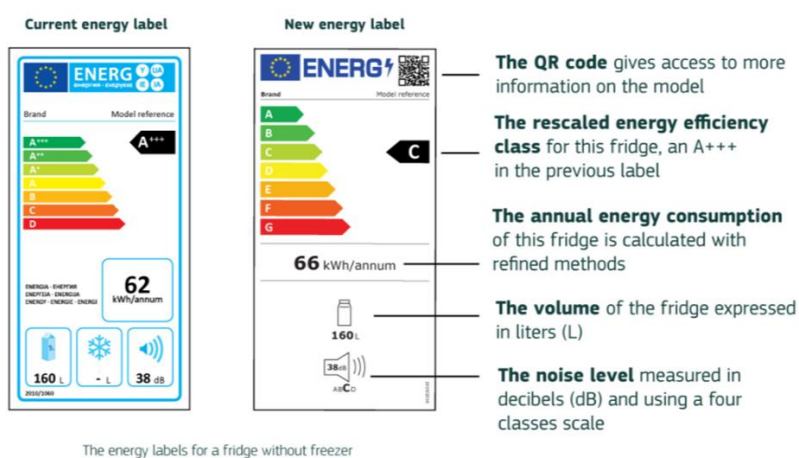
As regards the analyses of the national Long-term renovation strategies (LTRS) requested by EPBD article 2a, DG ENER developed a **Staff Working Document (SWD) analysing the national LTRS**. This material was extensively used for feeding into the process of the national Recovery and Resilience Plans as well as into the analysis of operational programmes for Cohesion policy funds.

To underpin the negotiation of the proposal for a recast Energy Performance of Buildings Directive, DG ENER pursued transposition work with Member States (fourteen infringements in 2021) and engaged in bilateral dialogue with Member States, exchanging best practices through the Concerted Action and the Committee to monitor implementation and enforcement.

The implementation phase of **Renovation Wave strategy** continued in 2021, focusing in particular on outreach activities, inter-institutional dialogue, on the steering of the Inter-service Group, and following specific activities under the umbrella of the RW strategy, like for instance the New European Bauhaus. The Renovation Wave Strategy also contributed to **crisis repair and recovery**, by providing framework criteria and goals facilitating a targeting of resources towards building renovation under the “Renovate flagship”.

The Commission prepared the next Eco-design Working Plan to identify new products with high potential of energy savings. Also, the **European Product Registration Database for Energy Labelling (EPREL)** that is already operational for suppliers and market surveillance authorities, was made partially accessible to the public. Consumers are now able via QR codes on printed labels, and via links on some retailers’ websites, to find product information for products with an EU energy label. Communication actions to explain the rescaling of energy labels were reinforced in March 2021 when the first five labels with a QR code appeared in shops. In 2022, the access will be fully opened and a search portal will be launched, following implementation of a new digital identity verification solution for suppliers, developed in the course of 2021.

How to recognise a rescaled product ?



1.3 Specific Objective 3: Research is mobilised and innovation fostered by designing a modern EU energy system that relies on clean energy technologies and digitalisation

Promoting competitive clean energy technologies

In line with the Communication on Energy System Integration, DG ENER started the preparation of a **Digitalisation of Energy Action Plan** with the aim of developing a competitive market for digital energy services that ensures data privacy and sovereignty and supports investment in digital energy infrastructure.

In accordance with the requirements of Article 35 (m) of the Governance Regulation 2018/1999, DG ENER published the second annual **Progress Report on Competitiveness of Clean Energy Technologies**. The report assessed the state of the clean energy

technologies and their competitiveness, while supporting the EU innovative capacity to reach the 2030 and 2050 climate and energy ambition. The report was published as part of the State of the Energy Union report in October 2021.

As regards **Horizon Europe**, DG ENER, in cooperation with other DGs, contributed to the implementation of the Strategic Plan and launched the first bi-annual Work Programme of Cluster 5 on Climate, Energy and Mobility, including the “Climate-Neutral and Smart Cities Mission”. Moreover, DG ENER was responsible, together with DG R&I, for the establishment of the “Built4People” co-programmed Partnership, the “Clean Hydrogen” Joint Undertaking, the “Driving Urban Transition” and the “Clean Energy Transition” co-funded Partnerships. The latter will accelerate energy transition in all its dimensions. It will enable joint R&I programmes from regional to national and European level, co-supported by industry, public organisations, research and citizens’ organisations. With an ambitious strategic research and innovation agenda it will address key challenges of energy transition with a clear output orientation and measurable impacts.

As outlined in the EU-wide assessment of the National Energy and Climate Plans (NECPs), the **Strategic Energy Technologies Plan (SET Plan)** needs to be better aligned to the new political priorities of the European Green Deal and the recovery. DG ENER, together with other services, supported the SET Plan community to ensure that the work of the Implementation Working Groups fully contributes to the European Green Deal objectives, while being consistent with the NECPs and the national policies and measures.

DG ENER continued **informing the energy policy debate** based on scientific evidence and knowledge of technology developments. It also continued supporting R&I across the whole energy system, including smart energy networks, hydrogen, batteries, buildings and industry. To this end, DG ENER enhanced its collaboration with the Climate, Innovation, and Networks Executive Agency (CINEA), to use Horizon projects results in the definition and implementation of sustainable energy policies, as well as in foresight activities.

DG ENER continued engaging with **international initiatives** and institutions, particularly with the International Energy Agency, the Clean Energy Ministerial, the Mission Innovation Initiative and the International Partnership for Hydrogen in the Economy, to foster international cooperation on clean energy innovation and deployment.

DG ENER continued supporting effective medical uses of nuclear and radiation technology in order to maximise their benefits, whilst providing high standards of quality and safety to European citizens. To this end, the Commission adopted in early 2021 the Strategic Agenda for Medical Ionising Radiation Applications (SAMIRA) Action Plan¹⁰, and DG ENER subsequently started implementing the key actions foreseen in the areas of securing the supply of medical radioisotopes, improving radiation safety and quality for patients and facilitating innovation. The SAMIRA actions were delivered in close co-operation with other Commission initiatives and programmes in the areas of Health and Research, in particular the flagship “Europe’s Beating Cancer Plan” initiative.

¹⁰ Commission Staff Working Document (SWD(2021) 14 final) on a Strategic Agenda for Medical Ionising Radiation Applications.

Developing nuclear fusion energy technologies (ITER)

In 2021, the ITER project reached 75.8% completion of the total construction leading to the beginning of the first experiments ("First Plasma"). This is below the planned rate of 83.1% and is due to the complexity of the underestimated first-of-the-kind engineering processes, delayed delivery of some components by the ITER Members, as well as continuing COVID-19 pandemic. Despite the applied mitigation actions and optimisation measures, the accumulated delays are making the key milestone of First Plasma no longer achievable in December 2025. The ITER Organization started in late 2021 to prepare a new schedule taking into account the experience to date with the First-of-the-Kind activities and the effects of the pandemic.

In parallel to the implementation of the ITER project, the JT-60SA tokamak built in Naka (Japan) by the EU and Japan under the Broader Approach Agreement continued commissioning activities in view of the inauguration of the machine in a new term in 2022.

The European Joint Undertaking Fusion for Energy (F4E JU) delivered the Euratom contribution to the ITER project in accordance to its mandate. In 2021, DG ENER led the discussions between F4E JU and Korea regarding the development of fusion fuel components, which resulted in the conclusion of a collaboration agreement that should be signed at the beginning of 2022. This cooperation should generate savings for EU activities of around EUR 40 million.

In addition, DG ENER continued to ensure its supervision function vis-à-vis of F4E JU.

1.4 Specific Objective 4: **All stakeholders are involved and a just transition is ensured** by enabling energy consumers to be at the heart of the clean energy transition and ensuring that no one is left behind, building on the European Climate Pact

DG ENER continued to implement the **just transition pillar** of the European Green Deal and to develop it further. First, DG ENER contributed to ensuring a just transition in EU coal, peat and oil shale regions. This included helping Member States to design their planning for **Just Transition Mechanism** that includes supporting new socio-economic opportunities in these regions also via energy-related investments. Within the scope of ENER-led own work, the Commission pursued the dedicated assistance under the **Coal regions in transition initiative**. The Commission started the implementation of a new dedicated exchange programme for practitioners from EU coal regions, whose first call opened in 2021 and will run into early 2022, when activities will start. The Commission also continued to implement the initiative for coal regions in transition in the Western Balkans and Ukraine, in coordination with other international organisations. Finally, the Commission signed an agreement with the European Investments Bank (EIB) on a joint technical assistance facility for clean energy and energy efficiency projects in coal, peat and oil shale regions.

DG ENER stepped up its efforts towards addressing **energy poverty**. All initiatives under the Green Deal Package have been designed to unfold synergies and to mitigate possible distributional effects in Member States. In the proposal for a recast of the Energy Efficiency

Directive, the Commission proposed the introduction of a definition of energy poverty to ensure a higher level of protection and empowerment of vulnerable customers. Significantly, the proposal for the Social Climate Fund (EUR 72.2 billion in funds to Member States for 2025-2032) is aimed at financing specific measures to help alleviate energy poverty and help the most vulnerable to adjust to carbon pricing and ensure the just and inclusive energy transition.

2021 was marked by the preparatory work for the launch of **Energy Poverty Advisory Hub (EPAH)**, which has significantly scaled up the work of its predecessor, the Observatory.

As part of the **toolbox of measures to help Member States address high energy prices**, the Commission initiated the process of setting up a dedicated working group Energy Poverty and Vulnerable Consumers Coordination Group via a dedicated commission decision. This is an example of a significant policy achievement designed equally to contribute to crisis repair and recovery.

Consumer empowerment and protection remain high on the EU policy agenda, but their relevance further increased with the energy price hike that Europe started experiencing in the second half of 2021. The 13th edition of the **Citizens' Energy Forum**, which took place online on 8-9 December 2021 saw the active participation of more than 200 stakeholders debating on actions toward a consumer-centred energy transition, from measures to protect vulnerable customers against price hikes, to concrete proposals to enhance consumer empowerment in a decarbonised and digitalised energy system.

DG ENER continued supporting local initiatives to speed up the clean energy transition on the ground and make it fair and just. Through these initiatives, the Commission supports technical assistance, knowledge exchange, as well as market uptake to speed up clean and just energy transition.

The **Covenant of Mayors Europe** launched a new chapter of its history, with a renewed ambition, aligned on the 2030 and 2050 energy and climate goals of the Green Deal. A high-level Ceremony in October 2021 was held. Peer-to-peer exchanges, capacity-building events and awareness raising events were held throughout the year. In June 2021, the Commission organised the large-scale Covenant of Mayors Investment Forum.

The **Smart Cities Marketplace (SCM)** continued enhancing the role of smart cities and communities by strengthening strategic partnerships between businesses, municipalities and the financing sector. Overall, the SCM's matchmaking activities led to a total of 126 projects, representing a magnitude of roughly EUR 600 million of investment, matched with the interest of its Investor Network, with another EUR 1.8 billion of submitted project proposals waiting to be further developed. The SCM continued its series of Financing Masterclasses and Matchmaking events, also in the frame of its yearly Smart Cities Marketplace Forum.

At the beginning of 2021, the Commission launched Phase II of the **EU Islands Initiative**, with the renewed EU Islands Secretariat. Twenty EU islands, selected in a transparent competitive procedure, are receiving dedicated advisory services and technical assistance, ranging from the very first steps in shaping energy transition agendas, to identification and

development of concrete energy transition projects. The 6th EU Islands Forum took place, with more than 270 participants and 50 speakers. In addition, two working group meetings with Member State authorities and island community representatives were set up.

1.5 Specific Objective 5: **The EU acts as energy global leader by contributing to an increased ambition for clean energy produced and used in third countries**

Building on the progress of the Energy Union and advances in the implementation of the European Energy Security Strategy, in 2021 DG ENER contributed to implementing the external dimension of the European Green Deal via continued close cooperation with EU's key international partners and a reinforced promotion of the values, objectives and best practices enshrined in the "Clean Energy for all Europeans" and "Fit for 55" packages as well as in line with the increased ambitious targets set out in the 2030 Climate Target Plan.

In 2021, the **international agenda** continued to be very intense, with the follow-up of the objectives of the European Green Deal and the Council Conclusions of 25 January 2021 on energy and climate diplomacy, a focus on the climate-energy nexus and the green sustainable recovery from the COVID-19 crisis, as well as a special peak at the UN high level energy dialogue in September and COP26 in November.

In particular, cooperation with the **USA** has been intensifying at the **EU-US Summit** in July with the agreement to accelerate a climate-neutral future and ensure a just transition that leaves no one behind, and the **EU-US Energy Council Working Group for Energy Security** in October leading to the EU-US Energy Council in February 2022. The Working Group in October focused largely on energy prices and energy security, in particular in **Ukraine** (corporate governance, reforms of the electricity and gas markets, renewable energy and decarbonisation, joint monitoring of the gas transit situation, and nuclear safety) **Moldova** and the **Western Balkans** (need for decarbonisation, promotion of coal phase-out, new energy infrastructure, including the role of natural gas, regional cooperation and energy integration).

Active cooperation under the **EU–Japan energy dialogue** continued with the launch of the EU–Japan Green Alliance at the EU–Japan summit meeting in May and workshops on hydrogen and offshore wind energy in September and October 2021.

With large emitters, the Commission advanced clean energy transition cooperation. DG ENER further reinforced cooperation with India implementing the **EU-India Clean Energy and Climate Partnership** and culminating in a new work programme adopted at the EU-India Energy Panel in December 2021.

DG ENER further developed strategic cooperation with **Algeria** and **Egypt**, with a view to facilitating European investments in gas and clean energy, and will engage with Turkey in line with the Council decisions.

DG ENER pursued regional cooperation via attendance and support to the Cairo based **East Med Gas Forum** to facilitate sustainable gas exports from the East Mediterranean. The **EU–Algeria strategic dialogue** on energy resumed after a two year pause and the

Commission worked towards a **Green Partnership Memorandum of Understanding** with **Morocco**.

In the **Gulf region** Commissioner Simson met with Qatar to discuss the developments of Liquefied Natural Gas markets, possibly increased deliveries to Europe and Qatar's successful work on limiting methane emissions, DG ENER also organised an EU Energy Day dedicated to the role of hydrogen in the green transition at the EXPO2020.

At the **7th Southern Gas Corridor Advisory Council** in February, the Commission welcomed the completion of the Southern Gas Corridor and discussed its possible future expansion.

In the framework of the **Eastern Partnership**, work focused on the future priorities and new set of deliverables (2021-2025), reinforced the role of renewable energy and cooperation on hydrogen and methane emissions reduction.

The Commission reinforced co-operation in all relevant sub-sectors towards decarbonisation of the energy systems with **Ukraine** and the other Eastern Partner countries. In particular, it continued to support Ukraine's regulatory approximation to the EU energy acquis and integration to EU energy and gas markets based on the Association Agreement (and its Annex XXVII on energy) and the Memorandum of Understanding (MoU) on energy partnership. The Commission actively worked on ensuring stable electricity and gas supply in **Republic of Moldova**. The first EU-Moldova High Level Energy Dialogue took place in October and encouraged energy market reforms and diversification of energy supply. The synchronisation of the Ukrainian and Moldovan electricity grid with continental Europe has been a key priority to stabilise the network and reinforce energy security in the region..

DG ENER continued to develop energy cooperation with the **African Union** notably the launch of the **African Single Electricity Market (AfSEM)** in June. Technical cooperation with **South Africa** on green hydrogen and just transition from coal continued throughout 2021, culminating in the Declaration on support for just transition internationally and the Just Energy Transition partnership with South Africa at COP26. Following the ratification of the South Africa – Euratom Nuclear Cooperation Agreement by South African competent authorities in 2021, DG ENER engaged with South African authorities in view of the effective implementation of the Agreement.

DG ENER continued to underpin the EU's leading role in the framework of international fora like the COP26 in Glasgow, **G7**, **G20**, the **Clean Energy Ministerial** and the **Mission Innovation Initiative** and the **International Partnership for Hydrogen in the Economy (IPHE)**. In May, G7 Climate and Environment Ministers emphasised a united G7 position on the ambition to achieve net zero by 2050, as well as the agreement to end international finance for unabated coal. In the framework of the newly established Energy Efficiency Hub hosted at the IEA, DG ENER worked to ensure its successful launch in line with EU's priorities. At the UN High Level Dialogue on Energy in September, a global roadmap to achieve universal global access by 2030 and net zero emissions by 2050 was agreed as well as a series of Energy Compacts that present multi-stakeholder partnerships and voluntary commitments from Member States and non-state actors. A major success for

the EU's energy and climate diplomacy was the launch of the **Global Methane Pledge** at the COP26 World leaders' summit. Other major achievements at the Summit to which DG Energy contributed include the Glasgow Breakthrough agenda, the COP26 Coal to Clean Power Statement and the Declaration on support for just transition internationally.

DG ENER pursued the development of city-level energy diplomacy with selected countries (e.g. Canada, US, China) by leveraging the **Global Covenant of Mayors** and its partners.

DG ENER continued its engagement in the process of the **Energy Charter Treaty modernisation**. It also continued to support the reform process in the **Energy Community** aiming at encouraging investments and further integrating energy markets in the region as well as completing the Treaty amendment process. Efforts paid off by the adoption of the Governance Regulation (including the preparation of integrated National Energy and Climate Plans), the Energy Efficiency Directive and the Renewables Directive, the Decarbonisation Roadmap and the appointment of a new Director for the Energy Community Secretariat at the Ministerial of Energy Community at the end of November. The adoption of the 2030 energy and climate targets will follow in the first half of 2022.

In general terms, DG ENER continued its efforts to strengthen the role of the private sector and the implication of International Financing Institutions and promoting the inclusion of energy in Free Trade Agreements. In addition, DG ENER continued to advocate for an increase of the use of the euro in international energy trading and markets at all levels, including nascent markets like hydrogen.

Throughout 2021, DG ENER contributed to strengthening **nuclear safety standards** globally, in cooperation with the European Nuclear Safety Regulator's Group (ENSREG). A key action in 2021 was the **finalisation of the ENSREG peer review of the implementation of stress test recommendations for the Astravets nuclear power plant** in Belarus. DG ENER also closely followed the progress of the stress test process for **Iran**.

In 2021, DG ENER prepared for representing EURATOM in the delayed or upcoming review meetings of **international conventions in the nuclear field** to which EURATOM is a party. These included, in particular, the Convention on Nuclear Safety, the Conference of the Parties to the Amendment to Convention on the Physical Protection of Nuclear Material and Nuclear Facilities, as amended in 2016 (CPPNM) and the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.

2. MODERN AND EFFICIENT ADMINISTRATION AND INTERNAL CONTROL

This section explains how DG ENER delivered on the achievements described in the previous section. It is divided into two subsections.

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

The second subsection deals with the other aspects of a modern and efficient administration: human resources, digital transformation and information management and sound environmental management.

2.1. Financial management and internal control

Assurance is provided on the basis of an objective examination of evidence 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. The results are explicitly documented and reported to the Director-General. The following reports have been considered:

- the reports by 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, including the results of the annual risk assessment exercise;
- the reporting on the implementation of DG ENER's Anti-Fraud Strategy;
- 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 available evidence. 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 covers 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 Effectiveness of internal control systems, and resulting in 2.1.4 Conclusions on the assurance.

2.1.1. Control results

This section reports and assesses the elements identified by management which support the assurance on the achievement of the internal control objectives (ICO)¹¹. The DG's assurance building and materiality criteria are outlined in Annex 5. The Annex 6 outlines the main risks together with the control processes to mitigate them and the indicators used to measure the performance of the relevant control systems. Annexes 7 and 8 provide details regarding the different elements used for building assurance.

Overview of the 2021 budget execution

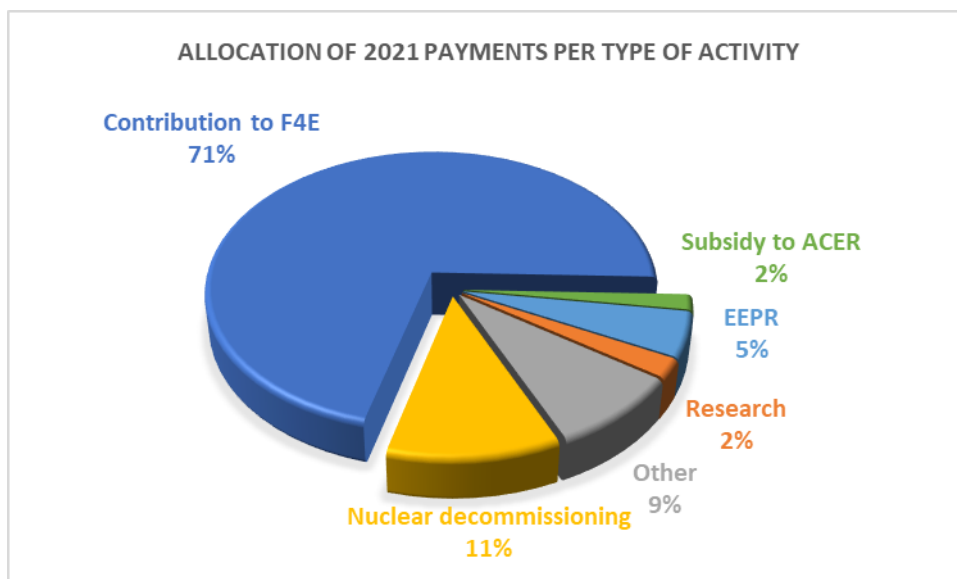
The total payments of DG ENER in 2021 amount to EUR 851.95 million, the vast majority being operational as the administrative part only accounts for 0.12%. In 2021, DG ENER had a very high execution of its appropriations¹², absorbing 99.81% of the commitment appropriations and 98.45% of the payment appropriations.

The chart below provides an overview of DG ENER's implementation of its programmes and activities under direct management¹³ (16% of the expenditure), which includes EEPR, Research and other programmes and indirect management (84% of the expenditure), including the contribution to F4E, the subsidy to ACER and Nuclear decommissioning.

¹¹ 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.

¹² This chart is based on C1, C5 and E0 credits only (commitment appropriations voted in the current budget (C1), budget modifications and other current year commitment appropriations, modifications due to amending budgets and transfers (C1)) while tables 1 and 2 of Annex 3 include all authorised appropriations.

¹³ Programmes under direct management include (Research, CEF PSA, SESAR Deployment Manager, SES Advisory bodies, administrative and other expenses).



DG ENER's management factually concludes that the control results, presented in the sections that follow are complete and reliable and provide reasonable assurance about the achievement of the internal control objectives. DG ENER concludes that:

- based on the main indicator results available, overall suitable controls were in place in 2021 and worked as intended;
- DG ENER does not need to introduce a reservation on the Seventh Research Framework Programme (FP7) overpayments following the de-minimis rule¹⁴, as the payments of DG ENER to FP7 programme are 0.97% or EUR 8.26 million with an exposure of EUR 1.33 million;
- no new reservation is introduced in this AAR as DG ENER 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. The risks are mitigated and/or monitored; improvements and reinforcements are being implemented.

The table below provides a summary of the payments made by type of activities.

Table 1: Overview table (amounts in EUR million)

Risk-type / Activities	Grants / Procurements	Cross-delegations to other DGs (other AOXDs)	Contributions and/or funds to EE (EU Agency, EA, JU)	Total Expenditure	NEI, e.g. Revenues, Assets, OBS ((in) tangible or financial assets & liabilities)
Administrative expenditure	1.00			1.00	

¹⁴ As from 2019, a 'de minimis' threshold for financial reservations is introduced. Quantified AAR reservations related to residual error rates above the 2% materiality threshold, are deemed not substantial for segments representing less than 5% of a DG's total payments and with a financial impact below EUR 5 million. In such cases, quantified reservations are no longer needed.

Research Grants	18.36			18.36	
EEPR	43.75			43.75	
Other Operational Expenditure	57.76			57.76	
Nuclear Energy	12.41			12.41	6.21 ¹⁵
Contribution to CINEA		2.72		2.72	
Contribution to F4E JU			607.60	607.60	
Subsidy to ACER			14.82	14.82	
Nuclear Decommissioning			93.53	93.53	
Financial Instruments					205.9 ¹⁶
Totals (coverage)	133.28	2.72	715.95	851.95	
Links to AAR Annex 3	Overall total (m EUR); see Table 2 – payments made				Table 4 – assets

In line with the 2018 Financial Regulation (FR)'s¹⁷ reporting requirements, in 2021, DG ENER reported:

- No cases of "confirmation of instructions" (new FR art 92.3);
- No cases of financing not linked to costs (new FR art 125.3);
- No cases of Financial Framework Partnerships >4 years (new FR art 130.4);
- Cases of flat-rates >7% for indirect costs (new FR art 181.6) - according to the H2020 and Horizon Europe Rules for Participation, indirect eligible costs of grants are determined by applying a flat rate of 25% of the total direct eligible costs. It is not a Commission decision, but the basic act that derogates from the FR in this case. This applies to all H2020 and HE grants, although in some cases the 25% could be directly embedded within a unit cost (e.g. unit cost for clinical studies).
- No cases of derogations from the principle of non-retroactivity of grants pursuant to Article 193 FR" (new Financial Regulation Article 193.2).

¹⁵ Tangible Assets

¹⁶ EUR 99.3 million for the share of CEF FI in pooled investments and EUR 106.6 for the shareholding in EEF F

¹⁷ Regulation (EU, Euratom) 2018/1046 on the financial rules applicable to the general budget of the Union, repealing Regulation (EU, Euratom) No 966/2012 (2012 Financial Regulation).

1. Effectiveness of controls

a) Legality and regularity of the transactions

DG ENER uses internal control processes to ensure sound management of risks relating to the legality and regularity of the underlying transactions it is responsible for, taking into account the multiannual character of programmes and the nature of the payments concerned.

The overall control objective is to ensure that the residual error rate affecting the relevant expenditure of 2021 remains below 2%. For the expenditure under the Horizon 2020 programme, control system aims at giving a reasonable assurance that the risk of error over the course of the multiannual expenditure period is, on an annual basis, within a range of 2-5 %, with the ultimate aim to achieve a residual level of error as close as possible to 2%.

DG ENER's portfolio consists of segments with a relatively low error rate, i.e. the directly managed grants under EEPR programme and under CEF programme support actions, the directly managed procurements, co-delegation, cross sub-delegation, indirectly managed expenditure and payments made to EU Agencies. This is, respectively, thanks to the inherent risk profile of these activities, the management mode and to the nature of the beneficiaries, and the performance of the related control systems.

It also includes one segment with a relatively high error rate, i.e. the directly managed research grants. The error rates are due to the complexities of the programme and to type of beneficiaries and are largely mitigated by efforts made to reinforce the related controls systems.

The assessment on legality and regularity for the directly managed FP7 programme shows a level of detected error that appears to be 'persistently high' over the years in terms of potential financial impact (exposure). This programme however represents a very limited share of the total activity. The impact on the amount at risk and on the overall materiality at DG level is therefore minimal. The estimated residual error rate for the directly managed H2020 funds remains within the estimated band of 2%-5% for this programme. The evolution of the risk at closure/payment for both FP7 and H2020 is in line with the evolution of the underlying amount of relevant expenditure, decreasing for FP7 and increasing for H2020. However, the detected error rate for H2020 decreased in 2021. Considering the limited exposure of DG ENER to this programme, the situation does not impair the assurance.

The residual error rate of the EEPR programme is estimated at 0.74%¹⁸. There is no indication of significant issues regarding other directly managed grants or procurements (administrative or operational, including procurements related to Nuclear Safeguards).

¹⁸ The increase of the residual error rate mirrors the change in calculation methodology where the error rate is calculated in function of the amount effectively audited.

Overall, on one hand, the ex-ante controls put in place by DG ENER contributed to the achievement of the policy and operational objectives and provided an assurance that the projects are running adequately. On the other hand, the ex-post controls had a positive deterrent effect within the programmes, which would foster system improvements and a better compliance with regulatory provisions. In order to maintain a reasonable level of assurance, DG ENER took mitigation measures to ensure the continuation of ex-post financial controls during the COVID-19 crisis. More details on these measures and on the quantified benefits from the ex-ante and ex-post controls exercised by DG ENER are disclosed in Annex 7.

Regarding indirect management, the key elements considered for the assurance are the delegation of the implementation of the Euratom contribution to the ITER project to the Fusion for Energy (F4E) Joint Undertaking (JU), the NDAP, ACER and Financial Instruments.

In 2021, DG ENER closely monitored the evolution of a significant deficiency that had affected F4E JU's control systems in 2020. As reported in DG ENER's 2020 AAR, issues arose with the signature of 13 legal commitments in a breach of F4E's Financial Regulation, following the adoption of an electronic signature process made necessary by the sanitary crisis. DG ENER could ascertain that the necessary corrective action had been undertaken and received assurance that the situation have been resolved.

While the JU is an autonomous EU body and has the full responsibility for the design and operation of its controls, DG ENER maintains a robust oversight of its operations and of its work to implement the Euratom contribution to ITER. The supervisory controls deployed by the Commission under indirect management do not aim at a daily monitoring of all transactions carried out by the entrusted entities and there was thus no possibility for DG ENER to prevent the occurrence of this issue, or to detect it before receiving the information from the JU. The Internal Audit Service performed an audit on the governance processes of the F4E JU and on supervisory processes. DG ENER will monitor the implementation of the resulting recommendations and will adjust its oversight accordingly. The findings of the IAS do not impact the assurance of DG ENER.

As regards the NDAP, DG ENER relies on updated pillar assessments for its relation with EBRD and the CPMA. The revision of the pillar assessment for the SIEA is still on-going and will be completed in 2022. This delay, however, does not impact the assurance of DG ENER and the corrective actions should be completed in due time to avoid any impact for the year 2022.

The reports received from the entities implementing indirectly managed expenditure (NDAP, Euratom contribution to ITER and subsidy to the Agency for the Cooperation of Energy Regulators (ACER)) provide the necessary assurance.

The report received from the European Investment Bank (EIB) regarding the DG ENER share in the CEF Debt Instrument indicate a negative economic result of the portfolio amounting to EUR (1.02) million. This non-realised loss is linked to the evolution of the fair value of the portfolio. The value of the shareholding in the European Energy Efficiency Fund (EEEEF) remains stable.

Through recoveries and financial corrections, DG ENER has in place an effective mechanism for correcting errors. During the reporting year the executed corrective capacity amounted in total to EUR 1.45 million, representing 0.14% of the relevant expenditure. The benefit at ex ante level control amounts to EUR 0.66 million, whilst benefit at ex post level amounted to EUR 0.01 million.

DG ENER's relevant expenditure, estimated overall risk at payment, estimated future corrections and risk at closure and its accompanying notes are disclosed in Annex 9, and further explained in section 2.1.1 of Annex 7.

The estimated overall risk at payment for 2021 expenditure amounts to EUR 4.41 million, representing 0.43% of the DG's total relevant expenditure for 2021. This is the AOD's best, conservative estimation of the amount of relevant expenditure during the year not in conformity with the contractual and regulatory provisions applicable at the time the payment was made.

This expenditure will subsequently be subject to ex-post controls and a proportion of the underlying errors will be detected and corrected in subsequent years. The conservatively estimated future corrections for 2021 expenditure amount to EUR 1.45 million. This is the amount of errors that the DG conservatively estimates will be identified and corrected by controls planned to be carried out in subsequent years.

The difference between those two amounts results in the estimated overall risk at closure of EUR 2.96 million representing 0.29% of the DG's total relevant expenditure for 2021, which despite being by EUR 0.41 million higher than 2020 amount, represents the same percentage of the relative expenditure as the one in 2020. This amount is a conservative estimate and is not considered material as regard assurance building.

For an overview at Commission level, the DGs' estimated overall risk at payment, estimated future corrections and risk at closure are consolidated in the AMPR.

Table 2: Estimated risk at payment and at closure (amounts in EUR million)

The full detailed version of the table is provided in Annex 9.

DG ENER	Relevant expenditure	Estimated risk (error rate %) at payment		Estimated future corrections and deductions		Estimated risk (error rate %) at closure	
(1)	(2)	(3)		(4)		(5)	
	m EUR	m EUR	%	m EUR	%	m EUR	%
ACER	11.72	0.00	0.00%	0.00	0.00%	0.00	0.00%
Contribution to F4E JU	640.59	0.00	0.00%	0.00	0.00%	0.00	0.00%
H2020 grants	16.35	0.37	2.29%	0.03	0.19%	0.34	2.10%
FP7 grants	32.92	1.79	5.44%	0.46	1.39%	1.33	4.05%
Other operational expenditure	44.47	0.22	0.50%	0.08	0.17%	0.16	0.33%
Nuclear decommissioning (CPMA / EBRD /	195.05	0.98	0.50%	0.33	0.17%	0.64	0.33%

DG ENER	Relevant expenditure	Estimated risk (error rate %) at payment		Estimated future corrections and deductions		Estimated risk (error rate %) at closure	
(1)	(2)	(3)		(4)		(5)	
	m EUR	m EUR	%	m EUR	%	m EUR	%
SIEA)							
Nuclear Energy operational expenditure	12.93	0.06	0.50%	0.02	0.17%	0.04	0.33%
Administrative Expenditure	1.00	0.00	0.50%	0.00	0.00%	0.00	0.00%
EEPR	60.41	0.98	1.62%	0.53	0.88%	0.45	0.00%
A: Total without contribution to EA's operating budget	m EUR 1 015.43	m EUR 4.41	% 0.43%	m EUR 1.45	% 0.14	m EUR 2.96	% 0.29%
CINEA	2.72	0.01	0.50	-	-	-	-
B: Total of DG's contributions	m EUR 2.72	m EUR 0.01	% 0.50	-	-	-	-
Total DG A+B of relative expenditure	m EUR 1 018.15						

b) Fraud prevention, detection and correction

DG ENER has developed and implemented its own anti-fraud strategy since 2012, on the basis of the methodology provided by OLAF. It is updated every three to four years or when necessary. It was last updated in October 2020. Its implementation is being monitored and reported to the management through DG ENER's Control Board and the dedicated reports three times per year. All necessary actions have been implemented, except for three actions that are either related to the new MFF or cannot be carried out in remote working mode. The remaining actions will be implemented in 2022-2023.

DG ENER also contributed to the Commission anti-fraud strategy and followed up 100% of the received financial recommendations. One non-financial recommendation was received in December 2021. Its implementation is on track in line with OLAF Guidelines.

In 2021, DG ENER obtained tangible results thanks to the anti-fraud measures in place. DG ENER revised its risk assessment process to better integrate the consideration of fraud. It also achieved its objectives in terms of representation in networks and working groups and awareness raising. Finally, it contributed to the peer reviews of the antifraud strategies of partner EU bodies. It had a smooth and effective cooperation with OLAF.

On the basis of the available information, DG ENER has reasonable assurance that the anti-fraud measures in place are effective. It will revise its action plan in 2022 and will focus on additional awareness raising activities as well as on the implementation of specific actions related to MMF 2021-2027.

c) Other control objectives: safeguarding of assets and information, reliability of reporting

The general control “Safeguarding of assets and information” and “Reliability of reporting” are relevant for DG ENER.

Safeguarding of assets relates to the management of assets and information within ‘Euratom Safeguards’ activity and to the assurance to give with regard to specific off-balance sheet items. DG ENER’s current procedures and controls are considered as robust and effective.

It also covers contingent liabilities, which correspond to the disclosure of on-going litigations and to the guarantees given in the framework of the CEF Debt Instrument. These guarantees remained stable.

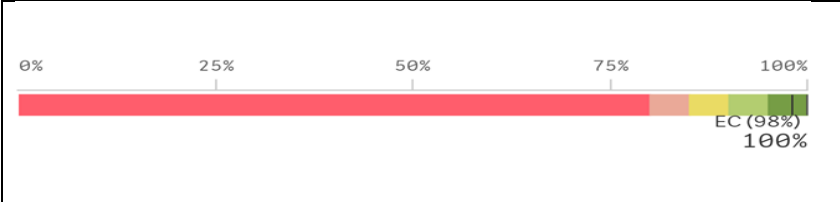
DG ENER assessed the reliability of the reporting it receives from the entrusted entities (F4E JU, EBRD, CPMA and SIEA). The information received is compliant with the applicable guidance. DG ENER concludes that overall the information and reporting are reliable and adequate for drawing assurance conclusions.

DG ENER received in 2021 a clean validation of its local system by DG BUDG and relied on unqualified opinion of the accounts and management reporting from EIB, EBRD, CPMA, SIEA and F4E JU. The qualified opinion issued by ECA regarding the legality and regularity of the payments underlying the accounts of ACER has no direct impact on the assurance of DG ENER.

2. Efficiency of controls

The assessment of the most relevant key indicators and control results shows that DG ENER is compliant with the rules and efficient with the budget execution.

As far as the **‘timely payments’ indicator** is concerned (i.e. payment accepted amount in time/ payment accepted amount in EUR), despite the pandemic DG ENER managed to achieve 100% which is above the Commission average.

Timely Payments	ENER Score	EC Score
	100%	98%

Due to the limited exposure to directly managed grants, the time-to-grant and time-to-inform indicators are not relevant for DG ENER.

Initiatives to improve the efficiency of operations include the revision of the processes and procedures related to the interaction with CINEA, a better integration of the different components of the Risk Management Framework and the extension of use of the electronic

signature (QES) to all financial transactions, both in DG ENER and on the contractor's/beneficiary's side.

3. Economy of controls

Ex-ante controls contribute to the achievement of the policy and operational objectives and provide an assurance that the projects are 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.

Overall, the total cost of the controls performed by DG ENER in 2021 was EUR 12.1 million or 1.42%. This cost is proportionate to the activities (see Annex 7, in particular table Y).

The relatively high costs reported regarding Research and Innovation expenditure under direct management cover more than the directly managed expenditure for H2020 and FP7, but also the programme level controls for H2020 and Horizon Europe. In absolute value they remain stable, around EUR 1.9 million. In relative value, the indicator for 2021 is however higher as it also includes programme level controls. For the EEPR programme, costs remain under control due to the focus on a limited number of large size projects.

The costs related to financial and supervisory controls for F4E JU and NDAP are stable and remain under 1%. The cost efficiency indicator for ACER is higher as the amount of the subsidy decreased in 2021.

Details of the estimated cost related to shared/pooled control activities carried out by the European Research Executive Agency (REA) and hosted by DG R&I (Common Implementation Centre; Common Audit Service; Common Policy Centre) for the Research and Innovation family are reported in the Annual Activity Reports of REA and DG R&I.

4. Conclusion on the cost –effectiveness of controls

Based on the most relevant key indicators and control results, DG ENER has assessed the effectiveness, efficiency and economy of its control system and reached a positive conclusion on the cost-effectiveness of the controls for which it is responsible.

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.

The solid controls are instrumental to maintain the programmes on track in terms of schedule and budget. Tangible results are visible.

In conclusion, DG ENER considers that the current control system represents a good balance between the invested efforts (internal control costs and remuneration fees), the obtained error rates (effectiveness of controls) and delivery of objectives (efficiency).

2.1.2. Audit observations and recommendations

This section sets out the observations, opinions and conclusions reported by auditors – including the limited conclusion of the Internal Auditor on the state of internal control. Summaries of the management measures taken in response to the audit recommendations are also included, together with an assessment of the likely material impact of the findings on the achievement of the internal control objectives, and therefore on management's assurance.

Internal Audit Service (IAS)

In December 2021, the IAS issued the final audit report on DG ENER support, monitoring and enforcement of the existing energy 'acquis'. The report contains one very important recommendation on the management supervision for the reporting and verification of compliance assessment results for the transposition of Directives and two important recommendations.

In January 2022, the IAS issued the final audit report on the Delegations and efficiency of decision making in F4E JU and cooperation mechanisms with DG ENER with one important recommendation.

DG ENER accepted all recommendations stemming from these two audits (see Annex 8).

During 2021, the IAS also issued the final consulting report on the Supervision of the Energy Community Secretariat by DG ENER .

In its contribution to the 2021 AAR process, the IAS issued the limited conclusion of the Internal Auditor on the state of DG ENER's internal control, which concluded that the internal control systems in place for the audited processes are effective, except for the observations giving rise to the 'very important' recommendation on DG ENER support, monitoring and enforcement of the existing energy 'acquis'. This recommendation will be addressed as defined in the related action plan transmitted to the IAS.

European Court of Auditors (ECA)

In 2021, DG ENER was associated in three special reports (SR) and one review issued by the European Court of Auditors (ECA).

Name of SR	Date of publication	Outline of the conclusions
Special Report 21/2021: "EU funding for biodiversity and climate change in EU forests: positive but limited results."	Published in October 2021	Associated
Special Report 22/2021 "Sustainable finance: More consistent EU action needed to redirect finance towards sustainable investment."	Published in September 2021	Associated
Special report 2/2022, "Energy efficiency in enterprises: some energy savings, but weaknesses in planning and project selection."	Published in January 2022	Associated

The audit findings do not indicate any systemic problem in DG ENER's internal controls or

financial management and rather focus on policy development and implementation.

In 2021, DG ENER was subject to the recurring ECA financial audits on the Declaration of Assurance (DAS) and to audits on the annual accounts of DG ENER, which were reviewed under Chapter IV of ECA's Annual Report on compliance - "Competitiveness for Growth and Jobs". No important or critical shortcomings were identified.

The Director-General is regularly informed of the conclusions and the main recommendations stemming from the work of the auditors. The timely implementation of all recommendations is regularly monitored throughout the year and reported at DG ENER's Control Board meetings.

Annex 8, section 2.1.2. provides a comprehensive overview of ECA and IAS audits and the follow-up of recommendations.

Conclusion on audit observations and recommendations

Overall, internal and external audit work contributes significantly to the continuous improvement of DG ENER systems and operations. The energy policy matters are increasingly scrutinised by ECA. The IAS, ECA and the Discharge Authority findings and recommendations are subject to a systematic follow up by the Directorate-General. The current residual risk from the audit recommendations remaining open in DG ENER does not impair the declaration of assurance.

In its conclusion on the state of internal control in DG ENER, the IAS stated that the internal control systems in place for audited processes are effective, except for one 'very important' recommendation, stemming from a 2021 audit.

In its overall opinion, the IAS issued an emphasis of matter on the COVID-19 crisis. DG ENER took the necessary measures to reduce the impact of the crisis on the performance of its controls. Furthermore, it assessed and monitored closely the risks stemming from the crisis, focusing in particular on its key programmes ITER and NDAP. As a result of this monitoring DG ENER identified a critical risk related to the schedule and baseline of the ITER project.

As regards F4E JU, ECA reiterated emphasis on matter on the cost and schedule on the overall project, but noted a considerable improvement in the quality of information provided. Furthermore, F4E JU accepted the recommendations of the IAS and committed to take the necessary corrective actions. As regards ACER, ECA issued a qualified opinion on the legality and regularity of one specific operation. None of these elements impair the declaration of assurance of DG ENER.

2.1.3. Assessment of the effectiveness of internal control systems

The Commission adopted an Internal Control Framework based on international good practice, to ensure the achievement of its policy and management objectives. Compliance with the internal control framework is a compulsory requirement.

DG ENER uses the organisational structure and the internal control systems suited to achieving its policy and internal control objectives in accordance with the internal control principles.

DG ENER has assessed its internal control system during the reporting year and concluded that it is effective and the components and principles are present and functioning well overall, but some improvements are needed as minor deficiencies were identified in relation to supervisory activities (Principle 10) and to delays in the update of the IT security plans and physical inventory checks (Principle 11). As a result component III on Control activities is considered partially effective.

On-going or planned improvements and/or remedial measures focus on implementation of the recommendations of the IAS related to the supervision of the implementation of the EU acquis and to the update of oversight over F4E JU as well as on an increased effort to proceed with the necessary updates of IT controls.

DG ENER registered five internal control deviations. None of these indicated a systematic internal control weakness.

DG ENER has due regard to the risks associated with the environment in which it operates and performs regular and targeted risk assessment to evaluate the impact of such risks. To enhance management oversight of internal control and risk management, DG ENER established a Control Board and a joint IT steering committee for Brussels and Luxembourg at senior management level.

2.1.4. Conclusions on the assurance

The audit results, the internal control assessment and the control indicators do not reveal any significant weaknesses and do not fulfil any of the materiality criteria laid down in Annex 5.

The information on financial management and internal control stems from management and auditors as listed in section 2.1.2. 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 comprehensive coverage of the budget delegated DG ENER.

Overall, the controls carried out by DG ENER for the management of the budget, implemented directly or indirectly, were effective, efficient and economical for the reporting year. The higher cost of control observed for directly managed research grant has no material impact on the overall economy of the controls. The resources assigned in 2021 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 conservative assessment of the authorising officer is that the overall amount at risk at closure is not material and corresponds to about 0.29% of the relevant 2021 expenditure.

For directly managed FP7 expenditure, based on the de minimis rule no reservation is necessary, despite a residual error rate above 2%. The overall FP7 payments are only 0.97% of the total payments of DG ENER for 2021, with a financial impact of EUR 1.33 million.

Concerning the directly managed expenditure, DG ENER implements appropriate ex-ante and ex-post controls, to the extent that they remain cost-effective and supports the other programme objectives and financial management.

Regarding indirectly managed expenditure, DG ENER considers, that its assurance was not materially impaired by the issue signalled by F4E JU as regards electronic signatures. It is furthermore too early to assess the impact the potential revision of ITER's baseline and schedule. The qualified opinion issued by the ECA as regards ACER has no direct impact on DG ENER's assurance.

CINEA's declaration of assurance is qualified by a quantifiable reservation concerning the CEF Energy sector residual error rate. An Action Plan has been developed and is under implementation to mitigate further risks. This reservation is not indicative of any supervision gap and therefore does not impact DG ENER's assurance.

There is no indication of any other element that would impair the assurance. The information received from F4E JU, from the executive agency CINEA, from the NDAP entrusted entities and from ACER is considered as adequate and reliable.

DG ENER updated its Anti-Fraud Strategy in 2020, based on a specific assessment of its fraud risk, and 86% of the actions from the action plan were already implemented or are on-going.

DG ENER assessed its internal control systems and concluded that the internal control framework is implemented and functioning as intended, except for Component III, Control activities that is affected by several minor deficiencies. Some improvements were identified. DG ENER identified the necessary corrective actions, which will be implemented in 2022. Risk management processes work as intended and contribute to the good operation of the control systems.

In relation to the recommendations issued in 2021 by ECA, none is considered to have a material impact on the declaration of assurance of DG ENER. All accepted recommendations issued by ECA have led to specific action plans addressing the underlying issues. The current residual risk from the audit recommendations remaining open for DG ENER does not impair the declaration of assurance.

Therefore, under the prevailing risk environment and from a managerial point of view, DG ENER's authorising officer by delegation can sign the Declaration of Assurance.

In conclusion, based on the elements reported above, 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 her capacity as Authorising Officer by Delegation has signed the Declaration of Assurance.

2.1.5. Declaration of Assurance

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 ¹⁹.

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 work 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.

Brussels, 31 March 2022

(signed)

Ditte Juul Jørgensen

AOD

¹⁹ True and fair in this context means a reliable, complete and correct view on the state of affairs in the DG.

2.2. Modern and efficient administration – other aspects

2.2.1. Human resource management

In 2021, DG ENER continued working on the implementation of the Green Deal Agenda and fulfilling its legal obligations, in particular in the nuclear domain. It also monitored the implementation of the Energy Union in all its dimensions.

Year 2021 was the second year of the COVID-19 pandemic (telework by default; travel restrictions, specially challenging for Euratom staff carrying out essential missions; access requirements to a secure IT environment).

DG ENER completed its ENER-4-FUTURE transformation process, with the new organisation chart taking effect on 16 January 2021. This process was carried out with the strong involvement of an internal steering team and inclusive consultations with all staff. DG ENER's values and principles, revised mission statement and a management charter underpin its day-to-day work. The revised organisation chart and working methods have allowed a more effective deployment of staff to meet the Green Deal policy priorities and make best use of efficiencies and synergies identified in the review exercise. In parallel, DG ENER's Human Resources Business Correspondents (HR BC) and managers successfully pooled their efforts to reduce the vacancy rate which automatically increased as a result of the need to keep posts unoccupied in view of the DG reorganisation and the return of the 13 posts to the Commission reserve. At the end of 2021, DG ENER's vacancy rate was in line with the Commission average.

In order to maintain the high level of staff engagement and to minimise the negative impact of sustained telework, DG ENER adopted its first ever local HR and internal communication (IC) strategies, using ENER's established thematic online chats model of staff consultation to ensure an inclusive process. The same process was successfully used in 2021 to discuss the new corporate HR strategy, the "Greening the Commission" initiative and the decision on working time and hybrid working. Based on this dual HR and IC framework, the focus for internal communication switched from organisational topics to energy policy in response to staff feedback. On HR matters, DG ENER developed an action plan with actions aiming at supporting managers, such as a 360° assessment exercise for Deputy Heads of Unit, specific DG ENER training on tackling unconscious bias, access to individual coaching sessions as well as more focused activities for all staff on well-being and work-life balance (improve self-efficiency training). There were regular activities throughout the year to ensure staff engagement and knowledge sharing by regular topical webseminars. DG ENER also successfully reached out to DG CLIMA and DG ENV with the aim of setting up a specialist Green Deal competition to attract the necessary profiles to the DG. DG ENER continued to apply lessons learned from working in the first phase of confinement to establish best practices and make necessary adaptations in subsequent phases.

In parallel, DG ENER continued to address specific HR needs: meeting quantitative targets of female appointments and gender balance. The ENER Equality Network provided guidance and ensured monitoring on gender and other equality issues. A dedicated talent programme "ENER4WOMEN" was launched to support development of 20 ENER female colleagues

through group and individual coaching sessions, career guidance assessment, learning paths.

Replacement of outgoing staff mainly in the nuclear domain, due to retirements but also to the difficulty to recruit staff in Luxembourg, has continued to require careful management. In 2021, an EPSO AST specialised competition on nuclear safeguards was launched to partially address this challenge, with the reserve list available from early 2022.

2.2.2. Digital transformation and information management

Implementation of the EC Digital Strategy

The implementation of the Commission Digital Strategy continued in 2021. The modernisation of selected information systems started.

Data ecosystem

In line with the European Commission Digital Strategy and the Data Strategy @EC, DG ENER started the implementation of a new data ecosystem in 2021. As part of this project, the existing management dashboards (e.g. EMOS) migrated to the corporate dashboard acceptance environment. The migration of the production environments will commence in 2022. The outdated data warehouses were upgraded as a temporary measure until the new data platform is implemented in 2022. The design of the new platform was laid out in 2021 based on the available corporate solutions. The data assets of DG ENER were reviewed and updated in the new corporate data inventory and their detailed analysis has started with the objective to identify rationalisation and improvement opportunities. The analysis will be finished in 2022.

Digital solutions

The implementation of EPREL and e-Platform continued throughout the year. The systems brought major improvements related to the collaboration with cross-border information systems of Member States.

IT Security

The specific actions underlined in the roadmap of ENER security plans as defined in the risk management framework of the Commission Decision 2017/46 continued to be implemented in three phases. In phase 1, the inventory and evaluation of DG ENER's IT assets using the new IT security risk management methodology was finalised. A clustering model was also put in place in order to have the same security risk management approach for similar IT systems. All critical and essential systems were assessed from the business impact perspective. In phase 2, DG ENER put a process in place to assist the system owners through the risks' assessment process for their IT systems. A significant part of these IT systems containing public information were websites that were not hosted on the default EC web platform and these were migrated to the default Europa Web Publishing Platform. As DG COMM finalized and shared the risk assessment and the IT security plan for the

Europa Web Publishing Platform, DG ENER was able to conclude risk assessments for those applications. As a result, DG ENER is developing the IT Security plans (phase 3).

An increased number of cyber-attacks took place in 2021 but there were no serious IT security incidents affecting DG ENER IT systems or staff. An article related to phishing and another one on measures to prevent information leakage were published on the Intranet to increase staff's IT security awareness. Additionally, email communication was used to inform colleagues on the cybersecurity threats.

Information Management

In application of the Commission strategy on Information Management²⁰, the Centre d'Administration des Documents (CAD) continued to monitor the efforts of filling documents by DG ENER, reaching the target of registered documents not filed below 2%²¹.

In 2021, a new tool was implemented in ARES to comply with Personal Data rules in place. Accessibility of files had to be reviewed accordingly. While the "share-by-default" principle remains within DG ENER files, the implementation of this new tool reduced the visibility of DG ENER files, especially for contractual files.

Specific actions for elimination of paper documents and training on the use of electronic qualified signature contributed to increase the efficient use of electronic workflows and reduce paper storage in DG ENER.

Data Protection

In addition to EU LEARN trainings offered, DG ENER continued providing training to staff in 2021 in order to raise awareness on the revised data protection rules. For instance, information sessions on data protection obligations for data controllers and on data protection aspects in HR were provided. Approximately 38 % of staff in DG ENER attended Data Protection Coordinator's information sessions on data protection in the period 2018-2021.

DG ENER continued working on the implementation of the Commission Data Protection Action Plan (C(2018)7432 final). DG ENER also continued ensuring new processing activities (e.g. supported by IT systems) in compliance with the data protection rules. In particular, DG ENER ensured a completion of new records once new processing activities were identified.

2.2.3. Sound environmental management

The Commission's Political Guidelines for the period 2019-2024 recognise the importance of European Union's leading role in reducing environmental impacts. DG ENER implements

²⁰ Data, information and knowledge management at the European Commission (C(2016) 6626)

²¹ 0.74% - DG ENER dashboard on information management indicators is regularly updated and accessible to all staff on Document Management Collaborative Space
<https://myintracomm-collab.ec.europa.eu/networks/eDomecME/SitePages/Home.aspx>

its own activities through the European Commission's environmental management (EMAS). The key priorities are: efficient use of natural resources (mainly energy, water and paper), reduction of the overall CO₂ emissions, waste prevention, recycling and re-use, and sustainable mobility. Due to the COVID-19 crisis, staff awareness on EMAS could not be promoted on the spot in DG ENER's premises.

The ENER Goes Green Network fosters DG ENER's response to its own challenges as regards climate change. The network proposed specific actions to reduce its environmental footprint at and outside work and show leadership within the Commission and beyond (i.e. commuting habits, management of office waste, organisation of office space, energy supplied and upscaling of the DG ENER building).

Regarding buildings, DG ENER contributed to the end of the year energy saving action by closing the DM24 building during the Christmas and New Year's holiday period. DG ENER later reassessed the needs and decided to go even beyond by closing DM24 during weekends.

The re-equipment of meeting rooms to allow for hybrid meetings, which started in 2020 continued in 2021. Three meeting rooms were equipped with VC facilities. A new action to equip Senior Management offices with VC facilities allowing hybrid meetings has been launched. All their offices should be fully equipped by the end of Q1 2022.

2.2.4. Examples of efficiency and economy

Synergies were achieved through the conclusion of a common framework contract, which will allow all units within DG ENER and DG MOVE to seek highly qualified external legal, socio-economic (including financial) and technical expertise.

As regards the Nuclear Decommissioning Assistance Programme, one of the key initiatives to improve efficiency was to foster a continuous increase of the level of knowledge sharing as well as actual synergies between the beneficiaries of the programme. This effort was pursued in 2021. The decontamination equipment designed, purchased and implemented under the programme for cleaning the primary circuit of two nuclear reactors in Bohunice (SK) was be transferred to the Kozloduy (BG) nuclear power plant. This led to actual economy of more than EUR 8 million.

DG ENER furthermore set up a group of experts in the field of financial aspects of nuclear decommissioning, spent fuel and radioactive waste management with the goal to provide advice on improving the economy and efficiency of the funding made available by the Member States. This initiative is expected to further deliver efficiency gains through improved policies and reporting.