



2022 FACTS & FIGURES



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BEFORE STARTING...

THE MAIN FOCUS OF THESE FACTS & FIGURES

- On the road to carbon neutrality:
 - EDF, world leader in low-carbon electricity generation
 - Strategy, CSR successes & carbon footprint
 - Nuclear : projects under construction, **Small Modular Reactors (SMR)** and **EPR2** reactors
 - An overview of regulated activities (Enedis, Linky, etc.)
 - Updates on renewable energies (pipeline breakdown, etc.) and growth prospects

Did you know?

Reading suggestions

- You will also find « **Did you know?** » takeaway boxes throughout the document that shed light on specific content
- Much more information is available in our URD, which you can download via:
<https://www.edf.fr/en/the-edf-group/dedicated-sections/investors-shareholders/financial-information/regulated-information/reference-documents>
- For more information, our team is available to you at this address: EDF-IRTeam@edf.fr

Browsing suggestions

- **Hypertext links** have been included to help you browse this document in tables of contents
- **Clicking on the EDF logo** (in the footer) will bring you back to the main table of contents (page 5)
- The name of the chapter can be found at the bottom of each page. **Clicking on the title of the chapter** (in the footer) will bring you back to the beginning of this chapter





TABLE OF CONTENTS

P.4
GROUP
STRATEGY

P.30
COUNTRY
PROFILE

P.39
GROUP MAIN
BUSINESSES

P.98
FINANCIAL DEBT
& DEDICATED
ASSETS

The EDF's *raison d'être* (p.9) is in line with the values of progress and sharing that have inspired EDF's actions since its creation, as well as with today's major challenges of addressing climate change and preserving the planet. The key issues surrounding its *raison d'être* have been formalised in 16 CSR commitments adopted by all the Group's business lines and subsidiaries

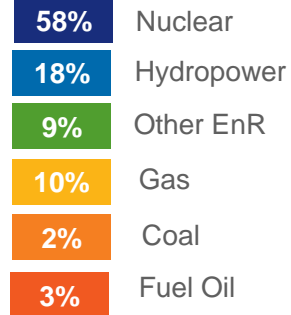
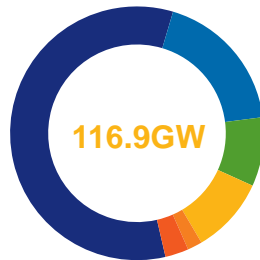
GROUP STRATEGY

- **GROUP STRATEGY** **P. 5**
- CORPORATE RESPONSIBILITY - CSR P. 16
- INNOVATION P. 27

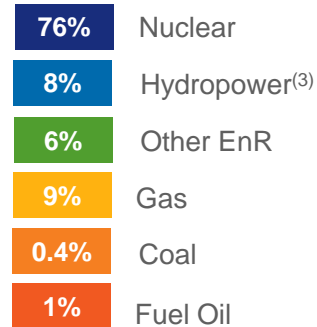
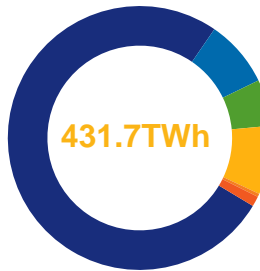
EDF GROUP 2022 KEY FIGURES

Operational figures as of end 2022

- **40.3 million** customer sites
- **116.9GW** installed capacity⁽¹⁾



- **431.7TWh** electricity output⁽²⁾



- **171,490** employees

o/w. ~64,000 at EDF SA, ~ 39,000 at Enedis, ~18,000 at Framatome, ~ 20,000 at Dalkia, ~ 11,000 at EDF Energy, ~6,000 at Edison & ~5,000 at EDF Renewables

2022 Financials

- Sales: **€143.5bn**
- EBITDA: **-€5bn**
- Net income excluding non-recurring items⁽⁴⁾: **-€12.7bn**
- Net investments⁽⁵⁾: **€16.4bn**
- Net financial debt : **€64.5bn**
Green bonds issued on 2013-2022: **€10bn**
- Ratings⁽⁶⁾: BBB stable (S&P) / Baa1 negative (Moody's) / BBB+ stable (Fitch)

EDF, the world leader in low-carbon electricity generation

- Carbon intensity: **50gCO₂/kWh**
- **90% decarbonised generation⁽⁷⁾**
- **1st producer worldwide** of zero direct CO₂ emission electricity in 2021 (476TWh)⁽⁸⁾
- **4gCO₂eq/kWh**: carbon footprint of nuclear life-cycle

(1) Consolidated capacities of EDF Group.

(2) Output from fully consolidated entities.

(3) Hydro output including pumping.

(4) Net income excluding non-recurring items is not defined by IFRS

standards, also see note 19.1 of the consolidated financial statements.

(5) Total net investments including acquisitions, excluding disposal plan.

(6) Sources: rating agencies as of 03/04/2023.

(7) Direct carbon emissions related to generation, excluding life cycle assessment of generation means and fuels.

(8) Enerdata Power Plant [Tracker](#) (latest publication).

A COMMITMENT TO LOW-CARBON GROWTH

CAP 2030

First producer worldwide of zero direct CO₂ emission electricity in 2021 (476TWh)⁽¹⁾

90% decarbonised generation⁽²⁾ thanks to nuclear 76% & renewables 14%

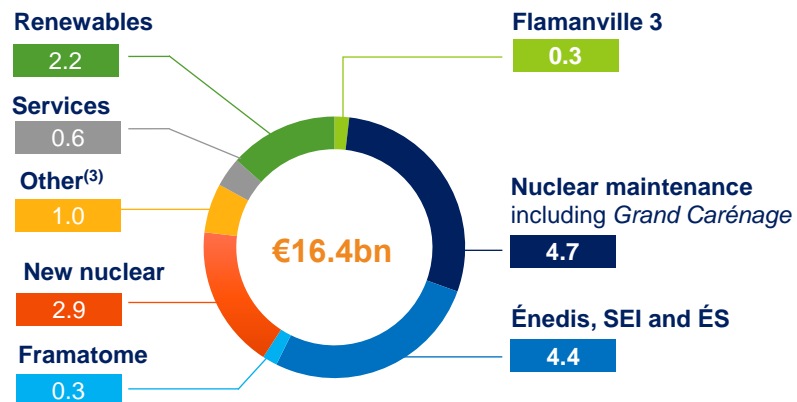
Group **capacity** mainly with **low-carbon technologies** (no direct emissions of CO₂, such as nuclear 58% & renewables 27%)

Renewable energy leader in Europe

Installed renewable capacity worldwide of **36GW** net at end-2022 with a target of **60GW net** in 2030

94% of the Group's investments are made in accordance with its carbon neutrality target

Net investments – end-2022 (excluding disposal plan – in €bn)



99% of EDF R&D's operating budget in France is dedicated to decarbonation and energy systems transition

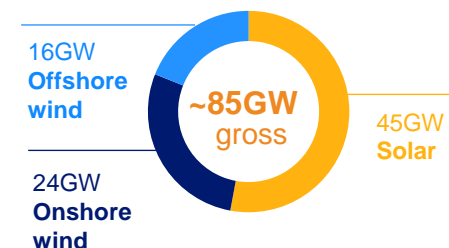
Nuclear & renewable pipeline of projects

- Nuclear projects : 6 EPR2 to be developed in France and 3 EPR under construction:

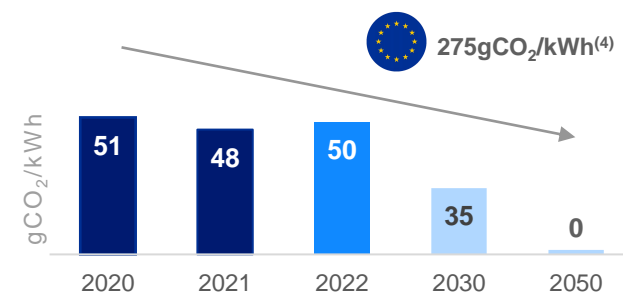
1 
France / Flamanville
~1.6GW

2 
UK / Hinkley Point C
3.2GW

- A large Group portfolio of renewable projects – end-2022



Carbon neutrality target in 2050



 275gCO₂/kWh⁽⁴⁾



Carbon intensity around 5x lower than European average

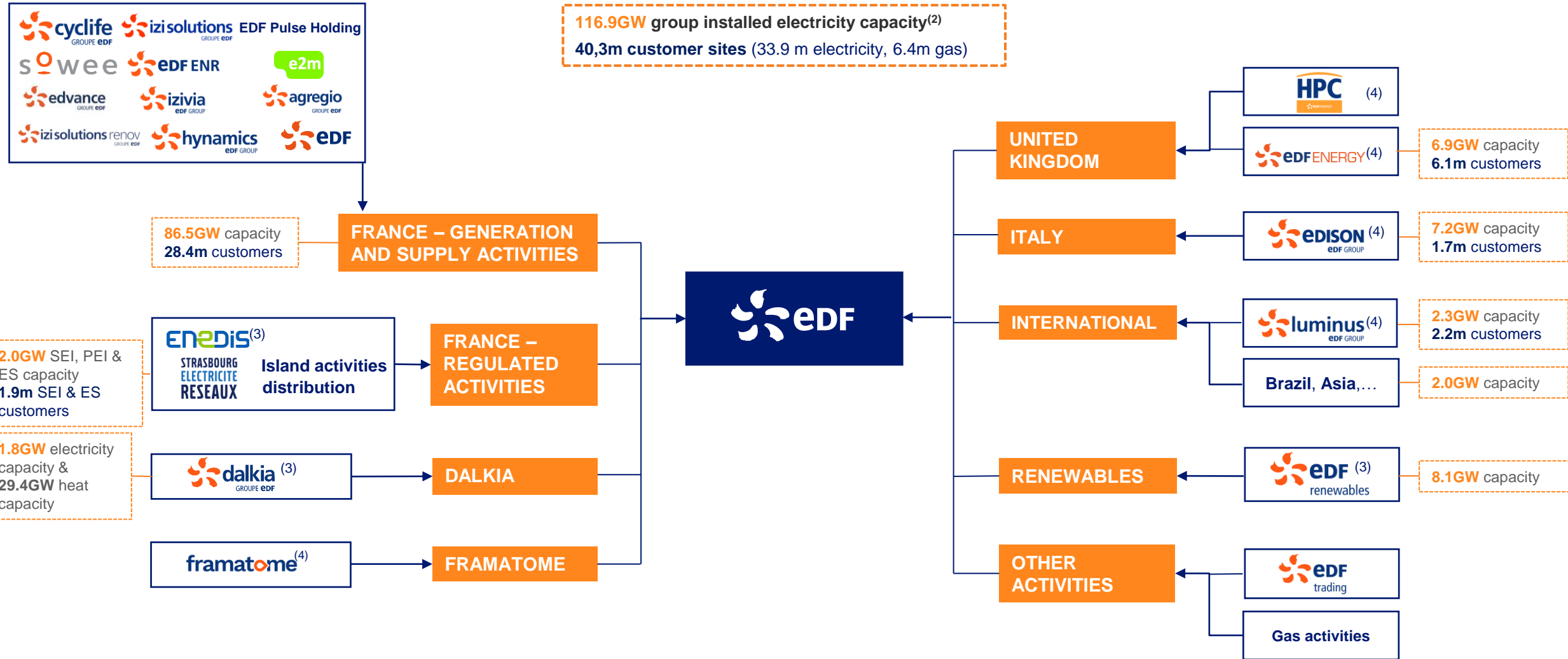
(1) Enerdata Power Plant [Tracker](#) (latest publication).

(2) Direct carbon emissions related to generation, excluding life cycle assessment of generation means & fuels

(3) Mainly thermal maintenance, gas, property, central functions.

(4) 2021 value, EU-27 carbon intensity average of power producers in Europe according to the European Environment Agency (EEA).

EDF GROUP: ORGANISATIONAL CHART BY SEGMENT⁽¹⁾



(1) Simplified organisational chart at 17/02/2023

(2) Consolidated capacities of EDF group

(3) French customers of these entities, grouped in the Retail entity in the “France – Generation and supply activities” segment.

(4) Shareholdings with minority interests.

CAP 2030 THREE STRATEGIC KEY PILLARS FOR 2030

The *Raison d'être* of EDF: To build a net zero energy future with electricity and innovative solutions and services, to help save the planet and drive wellbeing and economic development

A creator of services and solutions to support customers and territories in the shift towards carbon neutrality

As a key player in the decarbonisation of society, EDF creates value for its customers through the energy and **innovative solutions it provides**



> **30mtCO₂** avoided emissions⁽¹⁾

€10bn revenues in services⁽²⁾

> **1.5** contract/customer⁽³⁾

A global leader in the generation of CO₂-neutral electricity

EDF builds and operates electricity generation facilities that decarbonise the electricity mix and invests in **innovative and competitive technologies**



↘ **50%** CO_{2eq} direct emissions vs 2017

60GW net renewables incl. hydraulic

Grand Carénage completion

5 EPR in operation⁽⁴⁾

Initiating new **EPRs & 1 SMR**

An international key player in the energy transition

EDF is deploying its expertise as a low-carbon energy company in new areas of **growth and innovation, far from its historical borders**



Zero coal

Tripling activity vs 2015⁽⁵⁾

1.5 – 2GW net hydro installed capacity⁽⁵⁾

1 million off-grid kits

(1) Calculation of emissions avoided by products/services for renewable development in heating networks; energy efficiency; photovoltaic generation (excluding EDF facilities feeding their generation into the grid); electric mobility; residential heating pumps sold by EDF SA, Dalkia, Luminus, EDF in the UK, and Edison.

(2) Group.

(3) Scope of 4 priority countries in Europe called "G4" (France, Italy, the UK and Belgium) (residential).

(4) Flamanville 3, Hinkley Point C and Taishan.

(5) Excluding "G4" (France, Italy, the UK, and Belgium).

BUSINESS MODEL

ASSETS AND RESOURCES

Customer proximity

- **33.9** million customers in electricity
- **6.4** million customers in gas
- **Leading brands:** EDF, Edison, Luminus, Dalkia
- **157.5** million visits per year on digital consumption monitoring platforms

A human ambition

- **171,490** employees
- **79%** of employees took part in a skills development initiative during the year

An ambitious innovative ecosystem

- **2,208** R&D employees
- R&D 2022 consolidated budget of **€649m**
- **740** patented innovations at end-2022 by the R&D (EDF & Enedis)

Major industrial assets

- **116.9GW** of electricity generation capacity
- An integrated nuclear industry
- EPR technology
- A portfolio of wind and solar projects of **c.85GW** gross
- **1.4** million km of distribution network
- **40.6** million smart meters installed
- **Over 330** heating and cooling networks operated by Dalkia

A strong CSR commitment

- **A** rating Climate Change
- **No. 4** SUSTAINALYTICS
- **€22.3bn** of green & sustainable funding

BUSINESS MODEL

CAP 2030

Three strategic axes
to decarbonise our societies
in France, in Europe and in the world:

A creator of
services and
solutions to
support
customers
and territories
in the shift
towards
carbon
neutrality

A global
leader in the
generation of
CO₂-neutral
electricity

An
international
key player
in the energy
transition

Supported by an impulse of transformation,
innovation, human ambition,
Corporate Social Responsibility commitments,
and the implementation of 5 plans:



LE PLAN
stockage
électrique

THE ELECTRIC
MOBILITY
PLAN



LE PLAN
HYDROGÈNE

VALUE CREATION - 2022

For the climate and the environment

- An ambition to contribute to **carbon neutrality** by 2050
- Electricity output of **431.7TWh**, **90%** decarbonised with emissions of **50gCO₂/kWh**
- EDF, a water sharing player: water intensity of **0.83l/kWh**
- A commitment to **biodiversity**: an achievement rate of **Act4nature** international of **89%**

For customers

- High customer satisfaction level
- Almost **477,000** energy advice actions for customers

For partners and territories

- SMEs account for **23%** of EDF and Enedis procurements
- **1** direct job at EDF SA generates **4.2** jobs on the national territory
- **100%** of projects are subject to consultation

For employees

- An employee engagement index of **71%**
- Women represent **30.8%** in Management Committees
- An average salary equity ratio of **6.3**

Sales: **€143.5bn**

EBITDA: **-€5bn**

Net income excl.
Non-recurring items:
-€12.7bn

Sharing added value
with our
stakeholders

Suppliers
Purchases
€9.4bn

EDF group Global CSR
agreement

States and territories
Taxes
€3.2bn

Employees
Remuneration
€15.2bn

TARGETS⁽¹⁾

3GW gross of low-carbon electrolytic hydrogen projects developed by 2030 worldwide⁽¹⁾

A European leader with 100% low-carbon hydrogen generation in 2030⁽²⁾

from low-carbon grid electricity, renewable energy or nuclear power

Main markets addressed: Industry and transport (in territorial mobility and e-fuels for maritime and air transport)

- (1) Subject to the implementation of appropriate support policies and a favourable regulatory framework for the development of electrolytic hydrogen.
- (2) In line with the maximum emissions threshold defined in the European taxonomy, as part of its Hydrogen Plan, EDF is committed to ensuring that all its hydrogen production projects are below this threshold of 3kgCO₂eq/kgH₂
- (3) Eifer, joint research centre of EDF and the *Karlsruher Institut für Technologie* (KIT) in Germany.
- (4) IPCEI : *Important Project of Common European Interest* CEEAG : Guidelines on State aid for climate, environmental protection and energy. A 90% success rate at the different grant applications, both at national and European level.

ACHIEVEMENTS AND PROJECTS

A dedicated subsidiary and expertise within the Group

Hynamics, a wholly-owned subsidiary of the EDF group dedicated to hydrogen since 2019

Long-standing expertise provided by Eifer⁽³⁾ and R&D, including an electrolyser test platform at the EDF Lab *Les Renardières* site

A stake in **McPhy**, a French electrolyser manufacturer, since 2018 (14.1% to date)

Major projects under development with financial aids (within the framework of the IPCEI or the CEEAG⁽⁴⁾)

For Hynamics:

- The *Hynovi* project (330MW of electrolysis) in partnership with the cement manufacturer Vicat in France to produce e-methanol
- Also in France, the *ABC Ottmarsheim* project (50MW) with Boréalys to decarbonise ammonia production and the *HyDom* project (85MW) with Domo Chemicals
- In Germany, the *Westküste* project (30MW electrolyser) and the *Hyscale* project (700MW in phase 1), in partnership with the Heide refinery site to address its hydrogen needs

Notification of McPhy's gigafactory project (up to 1GW/year) in Belfort in the framework of the IPCEI

A portfolio of c. 60 projects representing 1GW of electrolysis worldwide

Several projects in Italy (Brindisi, Porto Marghera, Dalmine...), in the United Kingdom (Teesside, Sizewell...) and in Belgium

Ambitious projects combining hydrogen and renewables in the Middle East (i.e. Egypt), North America and Latin America

EDF ELECTRIC MOBILITY PLAN⁽¹⁾



TARGETS

30% MARKET SHARE IN THE ELECTRICITY SUPPLY FOR ELECTRIC VEHICLE OWNERS IN 2023

In the Group's four main markets (G4): France, the UK, Italy and Belgium

400,000

Charging stations rolled out by 2023

20,000

Smart charging stations operated by 2023

ACHIEVEMENTS AND MAIN PROJECTS

Support to EDF's customers and European partners in their shift towards e-mobility:

IZIVIA and Pod Point selected partners by IVECO to help customers switching to electric light commercial vehicles and heavy duty vehicles

IZI by EDF selected by Nissan for the supply and installation of charging solutions for its residential customers

More than 280,000 charging stations installed and operated by the Group at end-2022

EDF ENR launched in partnership with IZIVIA a combined offer with solar panels and charging stations for B2B customers

Pod Point:

- around 70,000 charging stations rolled out in the UK in 2022
- secured growth financing through a fund raising (minority IPO)

+ 15,000 smart charging stations operated by Izivia in France and PowerFlex in California

V2G: DREEV obtained certification from RTE to supply remunerated system services to the transport grid via electric vehicles

EVVE: Certification by the European Commission of the project led by DREEV and EDF among the winners of the Innovation Fund's call for small-scale projects. The subsidy will be used to install 800 V2G stations by end-2024. 200 V2G chargers are already installed

"EV100" project in line with the objective

22.6% of the EDF group vehicle fleet electrified at end-2022, versus a target of 100% in 2030

(1) The EDF Electric Mobility Plan supplements specific investments made in this field by Enedis, an independent subsidiary of EDF according to the French Energy Code.

THE FRENCH SOLAR PLAN



TARGET

TO BE A LEADER IN FRANCE

30% MARKET SHARE⁽¹⁾ BY 2035

(1) Market share expressed as installed gross capacities.

ACHIEVEMENTS AND PROJECTS



5.7GW

of ground-mounted projects in development at end-2022



570MW

of secured projects at end-2022



264MW

under construction at end-2022



141MW awarded at CRE tender 5.1 and 5.2 (winner in March 2022 and August 2022)

1st ranking at PPE 2 calls for tender with 15% of market share



Acquisition of a 45% stakes in 2021 in Green Lighthouse Development, French solar project developer, established in Nouvelle-Aquitaine

THE ELECTRICITY STORAGE PLAN⁽¹⁾

TARGET

**DEVELOP 10GW IN NEW STORAGE SITES WORLDWIDE
BY 2035, IN ADDITION TO THE 5GW OPERATED TODAY⁽²⁾**



ACHIEVEMENTS AND PROJECTS

PROJECTS IN OPERATION OR SECURED OF 0.9GW AT END-2022

In 2022, the EDF storage plan pursued its development:

Significant progress achieved on projects under construction (> 300MW) despite supply difficulties in 2022, with raw material crisis, marine shipping congestion and Ukraine war

2 new projects launched in the UK by Pivot Power **for 100MW-200MWh** (Sundon 50MW-100MWh / Bredbury 50MW-100MWh)

152MW of new capacities commissioned over the world (US + UK + China)

Market perspectives show constant increase:

The market of storage remains booming and in constant increase year after year (cumulated installed capacity has doubled between 2020 and 2022)

EDF has identified **a pipeline of more than 100 projects**

(1) The EDF group's business development model is based on partnerships. Not all of these projects will be fully consolidated.

(2) Principally PSHP (Pumped-Storage Hydropower Plants).

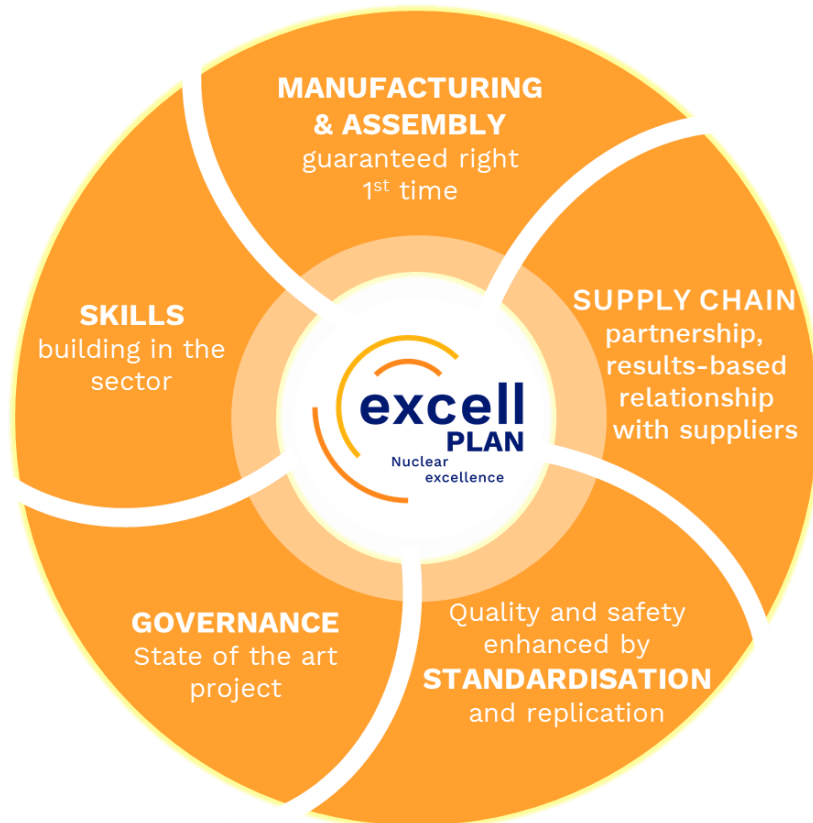
THE EXCELL PLAN

Aiming for excellence in the French nuclear industry



Launched in May 2020, the excell plan aims to enable the French nuclear industry to regain the highest level of rigour, quality and excellence in order to meet the needs of existing and future major nuclear projects

EDF Group and the industry implemented 30 commitments, structured in 5 focus area



ACHIEVEMENTS AT END-2022

By the end of 2022, 27 of the 30 excell commitments⁽¹⁾ have been met or exceeded. The last 3 highly demanding commitments have been partially met and will be fully achieved in 2023

- **Governance:** the introduction of “Large projects control” has played a key role, with high requirements and results as regards the quality and scope-stability of current projects
- **Skills:** half of the industry workforce in 2030 to be hired. Gifen⁽²⁾ uses the MATCH programme to identify discipline by discipline the skills requirements over the next 10 years, and the Nuclear Industry University will beef up the regional training actions to ensure sustainably that the right resources are at the right place at the right time
- **Manufacturing and Supply chain:** EDF’s selection of partners focused on quality produced and industrial potential, and shared risks and schedules and not only on cost reduction target. 58 manufacturing companies have developed their own plans for excellence, resulting in already visible improvements in quality.
- **Standardisation:** the nuclear equipment standardisation and replication objectives were reinforced by the drawing up of 22 required-use catalogues. This paves the way for future mass production with improved quality control

The excell plan is now entering a new phase aimed at enduringly embedding its principles in the company

(1) All of these commitments are available at the following address: <https://www.edf.fr/plan-excell>.

(2) Groupement des Industriels Français de l’Energie Nucléaire. Nuclear Energy French Industry Group.

GROUP STRATEGY

- **GROUP STRATEGY** **P. 5**
- **CORPORATE RESPONSIBILITY – CSR** **P. 16**
- **INNOVATION** **P. 27**

1 RAISON D'ÊTRE⁽¹⁾, 4 PILLARS, 16 CSR COMMITMENTS

To build a net zero energy future with electricity and innovative solutions and services,
to help save the planet and drive wellbeing and economic development

CARBON NEUTRALITY & CLIMATE

- Ambitious carbon trajectory
- Carbon offsetting solutions
- Adapting to climate change
- Developing electricity use and energy services



CARBON
NEUTRALITY
& CLIMATE



WELLBEING
&
SOLIDARITY

WELLBEING & SOLIDARITY

- Safety, health and security for all
- Ethics, compliance and human rights
- Equity, diversity and inclusion
- Energy poverty and social innovation

PRESERVATION OF THE PLANET'S RESOURCES

- Biodiversity
- Responsible land management
- Integrated and sustainable water management
- Radioactive and conventional waste, and circular economy



PLANET'S
RESOURCES
PRESERVATION



RESPONSIBLE
DEVELOPMENT

RESPONSIBLE DEVELOPMENT

- Dialogue and consultation with stakeholders
- Responsible regional development
- Development of industrial sectors
- Data responsible company

CSR

(1) EDF's *Raison d'être*, approved by the Shareholders' Meeting of 07/05/2020.

(2) Priority SDGs as defined in WBCSD public report: "An SDD Roadmap for Electric Utilities".

16 KPIs FOR MEASURING THE 16 CSR COMMITMENTS



	CSR COMMITMENTS	KEY PERFORMANCE INDICATORS	TARGETS	2020	2021	2022	DEAD-LINE	SCOPE
Carbon neutrality & climate	Ambitious carbon trajectory II	Carbon intensity : specific CO ₂ emissions from electrical generation and heat	35gCO₂/kWh	51	48	50	2030	Group
	Carbon offsetting solutions I	Deployment rate of the framework guidelines on carbon offsetting solutions within concerned entities	100%	-	50	50	2023	Group
	Adapting to climate change I	Deployment rate of new climate change adaptation plans within concerned entities	100%	-	47	100	2022	Group
	Developing electricity use and energy services I	Avoided CO ₂ emissions thanks to sales of innovative goods and services	>30Mt⁽²⁾	-	4.4 ⁽¹⁾	11.4⁽²⁾	2030	Group ⁽²⁾
Planet resources preservation	Biodiversity I	Achievement rate of "Act4nature international" commitments	100%	44	67	89	2023	Group
	Responsible land management I	Implementation rate of innovative solutions encouraging multifunctional land use	100%	-	20	40	2026	Group
	Integrated and sustainable water management II	Water intensity : water consumed / electricity generated by fleet	<0.95l/kWh	0.87	0.86	0.83	Annual	Group
	Radioactive and conventional waste, and circular economy I	Annual rate of conventional waste directed towards a waste recovery industry	>90%	91.9	92.7	88.4	Annual	Group
Wellbeing & solidarity	Safety, health and security for all I	Global LTIR	<1.8Ind	1.9	2.1	1.9	2023	Group
	Ethics, compliance and human rights I	Annual rate of feedback to whistleblowers within the one-month time limit, informing them of the admissibility of their report and the next steps of the procedure (New)	100%	-	-	100	Annual	Group
	Equity, diversity and inclusion I	Percentage of women in the Management Committee of the Group's entities	33%	28.7	29.8	30.8	2026	Group
	Energy poverty and social innovation I	Advisory actions carried out with customers within the framework of the Energy Support Service	600,000 – 1,000,000	905,017	642,482	476,638	Annual	EDF
Responsible development	Dialogue and consultation with stakeholders I	Annual rate of projects for which a dialogue and consultation procedure is engaged	100%	-	100	100	Annual	Group
	Responsible regional development I	Annual rate of procurement from SMEs in France	22% to 26%	23.4	24.9	23.2	Annual	EDF & Enedis
	Development of industrial sectors I	Achievement rate of supporting actions backed by EDF, encouraging relocation and maintaining nuclear industry skills ("France Relance" Programme)	100%	-	28.6	71.4	2023	EDF
	Data responsible company I	Achievement rate of EDF commitment to the French Responsible Digitalization Institute (INR)	100%	-	18.8	52.5	2024	EDF

(1) Data calculated in 2021 for EDF and Dalkia, on a smaller scope of services.

(2) New Target at G4 scope and integrating new products & services.

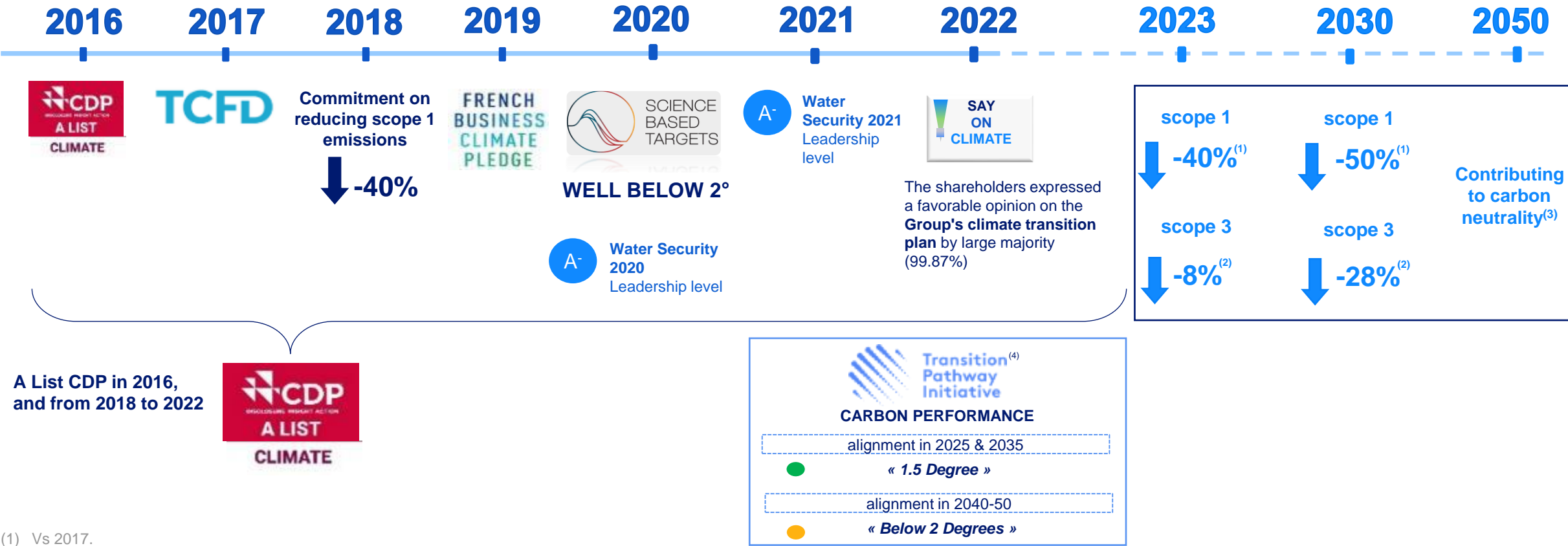
II : audited with reasonable assurance.

I : audited with moderate assurance.

EDF, A COMPANY COMMITTED TO PROTECTING THE CLIMATE



Ever since the Paris Agreement, EDF has been constantly strengthening its actions and responsibility on climate issues. The Group is committed to reducing its direct and indirect emissions, fostering its climate governance and maintaining its CDP Climate leader position.



A List CDP in 2016, and from 2018 to 2022



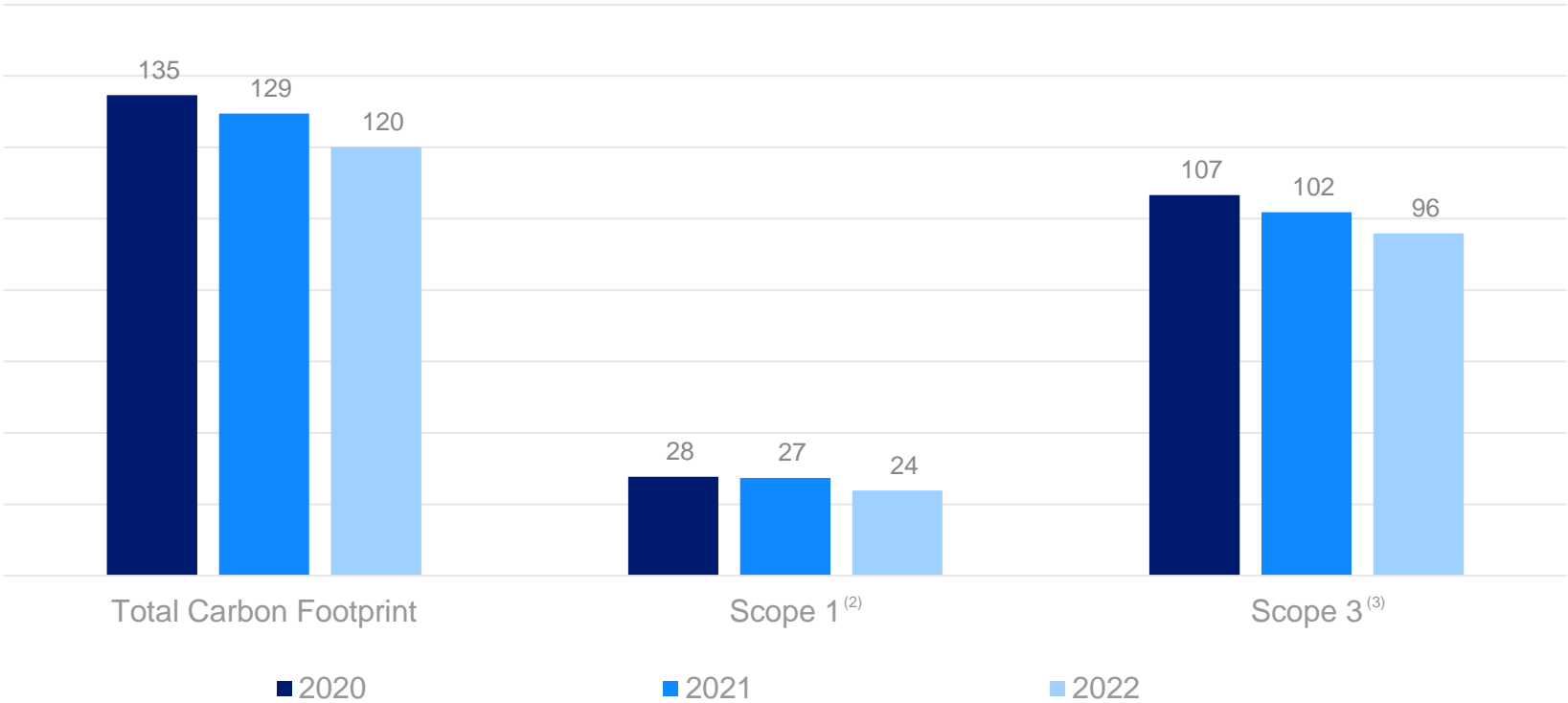
(1) Vs 2017.
(2) Vs 2019.
(3) Across all geographies and all scopes. Meaning : bring direct emissions close to zero (scope 1), reduce indirect emissions as much as possible (scope3), compensate residual emissions through negative-emission projects (3 scopes).
(4) <https://www.transitionpathwayinitiative.org/companies/edf>

CARBON FOOTPRINT⁽¹⁾



Carbon footprint in **constant decrease**, **-7% of CO₂ emissions in 2022** and **-21% on 2019 to 2022**

In mtCO_{2e}



(1) The Greenhouse Gas Protocol Initiative, more commonly known as the GHG Protocol, is the most internationally recognized GHG accounting method. Introduced in 1998 by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD), it was developed in partnership with companies, NGOs, and governments. <https://ghgprotocol.org/>.

(2) Scope 1 covers the direct emissions generated by EDF's asset.

(3) Scope 3 covers other indirect emissions generated by EDF suppliers, and by EDF customers or at our facilities. For information, scope 2 (non material) covers indirect emissions linked to losses in the electricity networks of EDF's electricity distribution companies and those linked to the purchase of energy for EDF's own needs.

CLIMATE REPORTING IN ACCORDANCE WITH TCFD GUIDELINES



The EDF Group was **one of the first companies** in the world to commit to supporting the **TCFD**⁽¹⁾ initiative in 2017 and **to report publicly, from 2018**, on the impact of climate change on its organisation according to the 4 fundamentals of TCFD and identified in its Statement on Non-Financial Performance since 2018



REPORTING 2022

1 STRENGTHENING OF CLIMATE GOVERNANCE

The « climate » criterion, based on carbon intensity, represents 30% of the Group's share of executive bonuses. In 2022, the target objective was 56gCO₂/kWh with a result of 50, the achievement rate is 120%

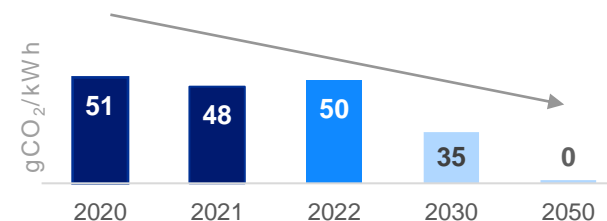
2 CARBON PRICES FOR GUIDING INVESTMENTS

In line with the 2021 CDP, the carbon price range currently used by EDF for its scenarios is 50 to 160€/tCO₂ by 2040, with a median price of 90€/tCO₂

3 RISK MANAGEMENT AND SCENARIO ANALYSIS

Validation by the Executive Committee and operational deployment of new adaptation plans to the physical risks of climate change, in all concerned entities

4 AN AMBITIOUS CARBON INTENSITY TRAJECTORY



(1) The Task Force on Climate Related Financial Disclosures (TCFD), set up by the Financial Stability Board (FSB), made specific recommendations between 2015 and 2017 on the climate reporting elements expected in companies' universal registration documents.



SUSTAINABLE FINANCING

€10bn OF GREEN BONDS
issued since 2013

€22bn GREEN & SUSTAINABLE FUNDING⁽¹⁾

72% OF BACK-UP CREDIT LINES INDEXED ON CSR KPIs
i.e. a total of €10bn⁽²⁾

7.4MtCO₂/YEAR AVOIDED
thanks to the projects funded by the green bonds

JUST TRANSITION

Publication of EDF's 2022 Just Transition report for a fair and inclusive energy transition⁽³⁾

DECARBONISED GENERATION & INVESTMENTS

90% DECARBONISED GENERATION⁽⁴⁾ IN THE WORLD
(o/w 90% in the European Union)

~94% OF INVESTMENTS IN LINE WITH THE GROUP CARBON TRAJECTORY

IMPACT SCORE

EDF, 1st large French group to publish its impact score⁽⁵⁾:

68/100
above the average for companies⁽⁶⁾



(1) Including credit facilities.

(2) Over a total of €14bn at 31/12/2022.

(3) See the Just Transition [report](#).

(4) Direct output-related CO₂ emissions, excluding life-cycle analysis of fuel and generation means. Electricity generation of fully consolidated entities.

(5) According to the methodology of Impact France Movement which is used to assess and map at 360 the impact of businesses with the aim to improve their ESG approach.

(6) The average score for companies having reported their impact score in Q1 2022 was 55/100.

NON-FINANCIAL RATINGS & AWARDS



MAINTENANCE IN THE MAJOR NON-FINANCIAL INDEXES: (Non-exhaustive list)



- World Climate Change
- Climate Paris Aligned
- EU Low Carbon Leaders



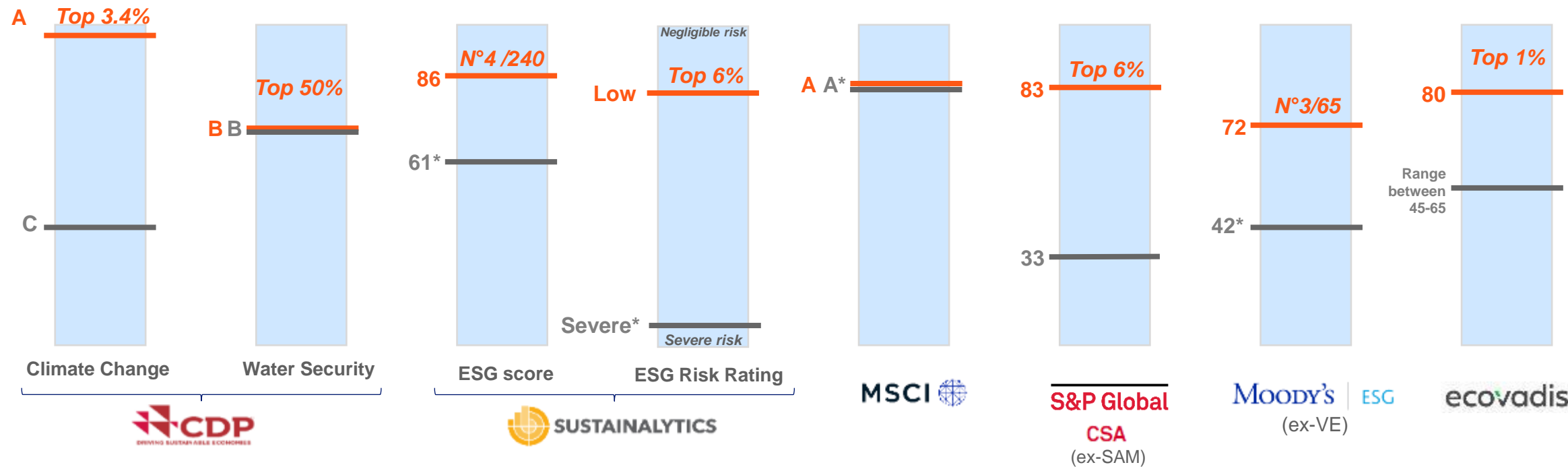
- CAC40 ESG
- Vigeo World 120
- Eurozone 120
- Vigeo France 20

Other

- STOXX Global ESG Leaders



Global average * Sector average



EDF is one of the 5 companies cited as an example of best practice by the

MAIN INTERNATIONAL COALITIONS OF EDF



EDF, winner of the *ESG Transparency Award* by Labrador France



NEW GREEN FINANCING FRAMEWORK IN JULY 2022



RESPECTS THE GREEN BOND PRINCIPLES

Since 2013, EDF's Framework has followed the requirements and key recommendations of the **ICMA Green Bond Principles including robust transparent annual impact reporting**. This framework is subject to an annual verification report



ALIGNED TO THE EU TAXONOMY

The Framework includes only eligible project categories with investments that **are fully aligned to the EU Taxonomy**, including the technical screening criteria « Do No Significant Harm » (DNSH) and minimum social safeguards



BEST IN CLASS

The Framework has been subject to an independent second party review, **CICERO Shades of Green** which has awarded it a certified « Medium Green » rating and « Likely aligned »⁽¹⁾ with the EU Taxonomy



(1) CICERO Shades of Green uses the terminology "likely aligned/partially aligned/not aligned". The term "likely" is not to indicate an uncertainty in CICERO's assessment but is meant to reflect the current lack of official authority as a verifier of the EU Taxonomy.

GREEN FINANCING FRAMEWORK FOLLOWS BEST MARKET PRACTICES AND IS ALIGNED WITH THE EU TAXONOMY



First company to issue a Green Bond in 2013. Active member of the Green Bond Principles governance and co-founder of the Corporate Forum on Sustainable Finance
3 updates of the Framework in order to contribute to better market practices, to be aligned with the European Taxonomy and include Green Bonds, Green Commercial Paper and Green Repo

1 - USE OF FUNDS

- Use of Proceeds shall be limited to projects in the below eligible categories
 - Renewable power projects,
 - Hydropower generation,
 - Energy efficiency projects,
 - Distribution of electricity,
 - Nuclear power generation
- Eligible investments shall align with the EU Taxonomy, including “Do No Significant Harm” criteria and minimum social safeguards
- Look-back period limited to three calendar years from the issuance year

2 - PROJECT SELECTION PROCESS

- An **ad-hoc working group** is responsible for helping EDF entities identify green bond eligible projects and verifying their eligibility
- EDF currently verifies and reports **Taxonomy eligible CAPEX** and according to the Taxonomy regulation and Taxonomy complementary delegated acts. As of 2021 EDF reports these amounts in its Universal Registration Document.
- EDF shall **exclude projects already financed by its social bond program**.
- Investments may include **tangible or intangible assets, Investments and some operating expenditures** (such as R&D and investments in the maintenance of green assets)

3 - FUND MANAGEMENT

- Funds are **managed and monitored separately** until they are allocated to eligible projects. They are invested in **Socially Responsible Investments funds⁽¹⁾** until their allocation
- Net proceeds of green bond issuances identifying **nuclear power generation** as an eligible project shall be **managed in a portfolio separate** from other issuances to ensure full traceability
- EDF shall use best efforts to allocate all eligible proceeds within 24 months after issuance

4 – REPORTING

- **At half-yearly intervals**: allocation of funds
- **Annually**: allocation of funds + list of projects financed and environmental impacts (at the level of each green issue) in URD

5 – EXTERNAL REVIEW

- **External ex-ante opinion**: “Medium Green” rating and “Likely aligned” with the EU Taxonomy by **Cicero** on EDF's Green Financing Framework
- **Ex-post certification**: annual report issued by an **external auditor** on the allocation of funds and the compliance of Green Bond issues with the Green Financing Framework, the Green Bond Principles, the compliance of the CO₂ emissions calculation terms

(1) Socially Responsible Investments funds, as certified by the French Ministry of Finance's Label ISR.

GREEN BONDS: PROCEEDS ALLOCATION AND IMPACT REPORTING



Issue date	Fund raised	Funds allocated	Projects financed by the Green Bond	Part of the total investments financed by the Green Bond	Total net ⁽¹⁾ capacity of the project financed (in MW)	Expected net ⁽¹⁾ avoided CO2 emissions (in Mt/yr)
Nov. 2013	1.4Md€	1.4Md€	EDF Renewables projects	59%	976	1.55
Oct. 2015	1.25Md\$	1.25Md\$	EDF Renewables projects	58%	815	1.83
Oct. 2016	1.75Md€	1,248M€	EDF Renewables projects	54%	962	1.61
		502M€	EDF Hydro operations	100%	903	0.01
Jan. 2017	26,000M¥	14,021M¥	Wind projects (EDF Renewables, Luminus)	15%	86	0.12
		11,979M¥	EDF Hydro operations + Luminus hydro project	87%	133	0.01
Sept. 2020	2.4Md€	2,246M€	Projects & portfolio purchases by EDF Renewables, EDF ENR & Luminus projects	78%	1,412	1.35
		138M€	EDF Hydro operations and biodiversity projects	100%	123	0.001
Nov. 2021	1.85Md€	1,139M€	EDF Renewables projects	60%	895	0.88
			EDF Hydro operations and biodiversity projects	98%	422	0.001
				Total	6,727	7.361

Issue date	Fund raised	Funds allocated	Projects financed by the Green Bond	Part of the total investments financed by the Green Bond	Renewable capacity connected (in MW)	Number of smart meters	New grid lines built (in km)
Oct. 2022	1.25Md€	1.25Md€	Distribution of electricity projects	100%	5,181	5,488,000	2,950

The detailed list of EDF Renewables projects and hydraulic investment operations by category are published in EDF's 2022 URD.

(1) Sum of the impacts of each project weighted by the share of total investment funded by the corresponding Green Bond.

GROUP STRATEGY

- **GROUP STRATEGY** **P. 5**
- **CORPORATE RESPONSIBILITY - CSR** **P. 16**
- **INNOVATION** **P. 27**

INNOVATION: EDF PULSE, INCUBATOR OF INTERNAL PROJECTS AND INVESTMENTS IN START-UPS

The EDF group has created an **Innovation Division** to identify and develop new activities and innovative solutions required to reach net zero in 2050

6 strategic areas for innovation

with examples of start-ups supported⁽¹⁾



Decarbonation solutions and services for all



Operational performance and end-of-life management of existing generation and storage assets



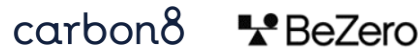
Carbon free energy generation and storage solutions of tomorrow



Decentralized energy systems



Carbon capture, premium offset and utilisation solutions



Societal trends



(1) See [all the start-ups](#) EDF Pulse Ventures supports

R&D: INNOVATE TODAY AND VENTURE INTO TOMORROW

Through the expertise of its researchers, its testing resources and digital capacity, EDF R&D is preparing the future and opening up new possibilities in the world of energy.

EDF's R&D covers all the business areas and activities in the energy sector.

In line with EDF group's *raison d'être* and CAP 2030 strategy, its research focuses on four main priorities:

- **Decarbonising our client's uses thanks to electricity**
 - **Strengthening the performance of generation assets**
 - **Inventing tomorrow's energy systems**
 - **Accelerating digital transformation**
- R&D mobilises its energy experts for the benefit of the EDF group entities and subsidiaries, as well as external customers. It relies on more than **70 platforms for testing**, measurement and simulation, among **the most modern and effective in the world**, in all areas of the energy sector.
- R&D also provides its customers with expertise in large-scale **digital simulation software and supercomputers**. EDF's R&D has a computing capacity of 11 petaFLOPS, making it one of the largest players in this field.



EDF SA'S R&D IN 2022

- **2,208 employees** worldwide (EDF SA)
- **128 PhD** students in France
- **9 research centres:**
 - 3 in France
 - 6 internationally (Germany, United Kingdom, China, United States, Singapore and Italy)
- **20 joint laboratories** with partners
- **+300** academic and industrial **partnerships** around the world
- **740 patented innovations** protected by **2,189** property titles in France and abroad
- **€473 million budget** in 2022 (EDF SA)
- **99%** of R&D operating budgets in France dedicated to decarbonation and energy system transition

R&D PRESENT IN ALL KEY TECHNOLOGIES FOR THE ENERGY TRANSITION

Based in regions home to a wealth of innovative technologies and business models, EDF's international research centres manage or support key Group projects **on microgrids, hydrogen, offshore wind, and mobility**

Three research centres in France and six internationally, as well as an office in Brussels.



TABLE OF CONTENTS

P.4
GROUP
STRATEGY

P.30
COUNTRY
PROFILE

P.39
GROUP MAIN
BUSINESSES

P.98
FINANCIAL DEBT
& DEDICATED
ASSETS

EDF group has 40.3 million customer sites worldwide: residential customers, businesses, and local municipalities. It is a major energy provider on key European markets: France, the UK, Italy and Belgium. The Group is seeking to move into new geographical areas, developing low-carbon solutions in growing countries and strengthening its positions in Europe

EDF GROUP'S NET INSTALLED CAPACITY* BY COUNTRY AT END-2022

* Net capacity according to EDF's percentage ownership in Group companies, including associates and joint ventures.

In MW

123,005

67,824

7,678

11,528

13,397

22,577

Europe 109,192

66,774

5,719

10,114

4,645

21,940

France⁽¹⁾

92,989

61,370

4,666

3,516

2,670

20,767

UK⁽²⁾

6,118

4,706

1,015

397

Italy

6,439

7

4,923

579

930

Belgium

2,025

698

829

452

46

Greece

701

406

295

Netherlands

435⁽³⁾

435

Germany

249

174

76

Spain

15

5

10

Poland

99

31

68

Switzerland

122

122

America 7,682

186

1,012

6,279

205

United States⁽⁴⁾

4,358

4,358

Brazil

1,757

827

725

205

Canada

696

696

Chili

589

186

185

218

Mexico

282

282

Middle East 890

890

Israel

296

296

Saudi Arabia

149

149

United Arab Emirates

445

445

Egypt

80

80

South Africa

73

73

Morocco

34

34

Africa 187

187

Asia 5,054

1,050

1,774

402

1,396

432

China

3,426

1,050

1,774

601

Laos

432

432

Vietnam

436

402

34

India

760

760



Nuclear



Fossil-fired (coal and fuel oil)



Gas (including cogeneration)



Renewables



Hydropower

(1) Including small hydropower plants in mainland France and assets in overseas France.

(2) End of generation of West Burton A on 31/03/2023, last coal plant in the UK for EDF.

(3) Sloe CCG has been sold in January 2023.

(4) Excluding energy storage capacity and EDF Renewables biogas production capacity.



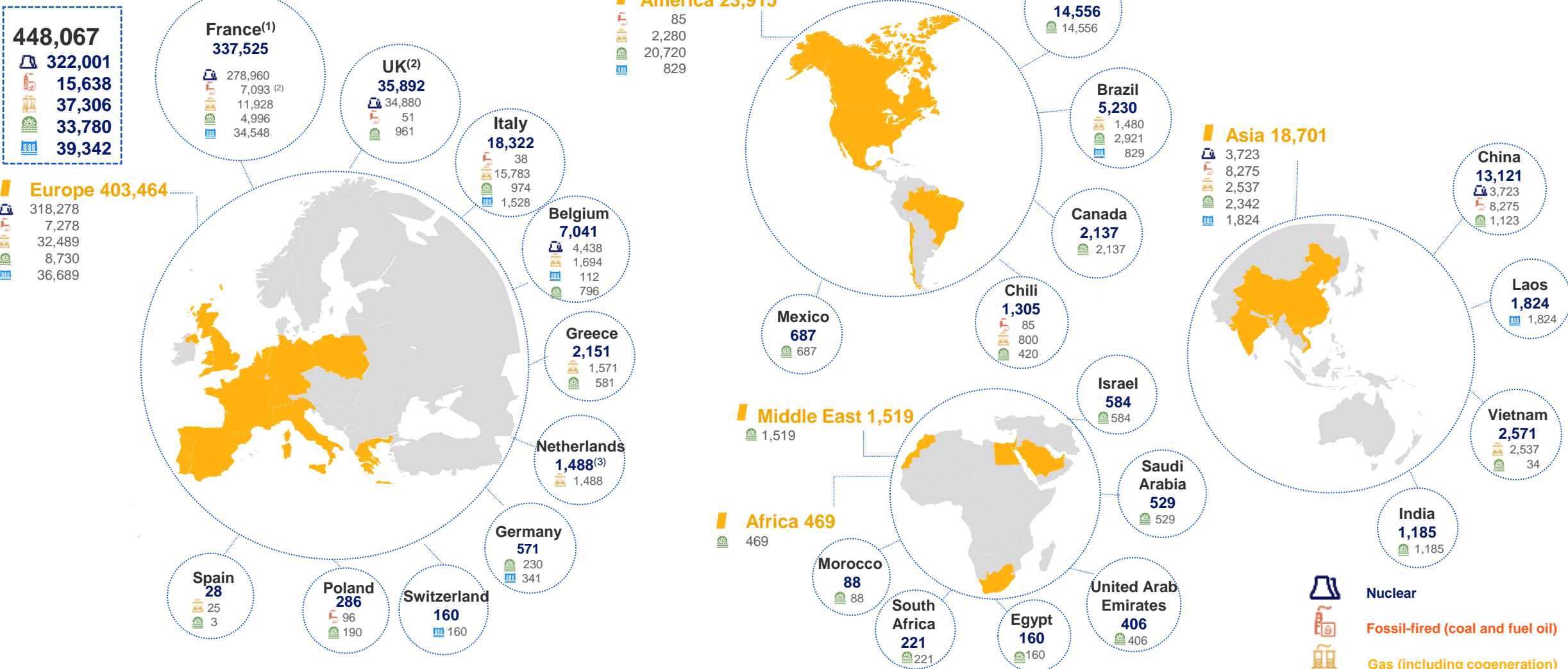
2022 FACTS & FIGURES

COUNTRY PROFILE

EDF GROUP'S NET OUTPUT* BY COUNTRY IN 2022

* Net output according to EDF's percentage ownership in Group companies, including associates and joint ventures.

In GWh



(1) Including small hydropower plants in mainland France and assets in overseas France.

(2) End of generation of West Burton A on 31/03/2023, last coal plant in the UK for EDF.

(3) Sloe CCG has been sold in January 2023.

(4) Excluding energy storage capacity and EDF Renewables biogas production capacity.

FRANCE: GENERATION AND SUPPLY ACTIVITIES OF EDF

➤ Key points:

- **Active across the whole electricity value chain, from generation to sales and optimisation/trading**
- **Owning the largest nuclear fleet worldwide (o/w 56 operating reactors in France)**

➤ 2022 key figures:

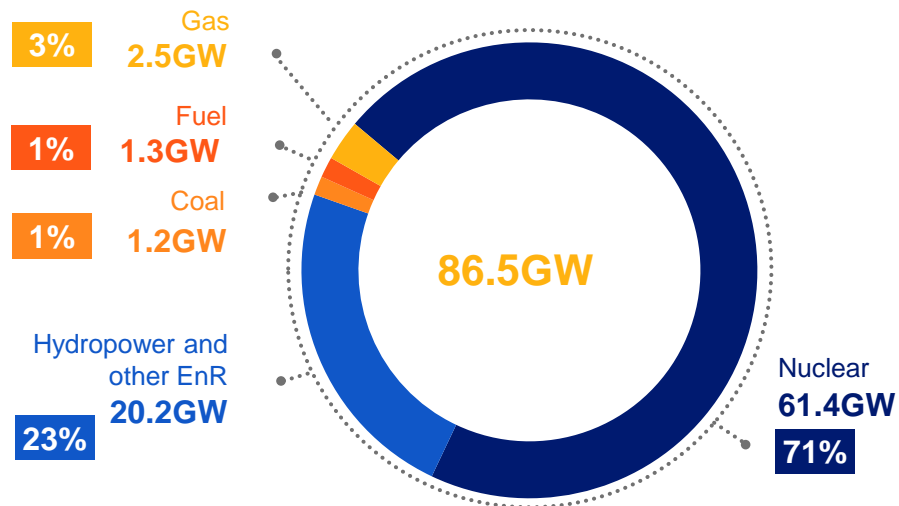
- **-€23.1bn**: EBITDA
- **28.4m** of customer sites (**26.2m**: electricity and **2.2m**: gas)

- **~61,000**: workforce
- **96%**: CO₂-free generation⁽¹⁾

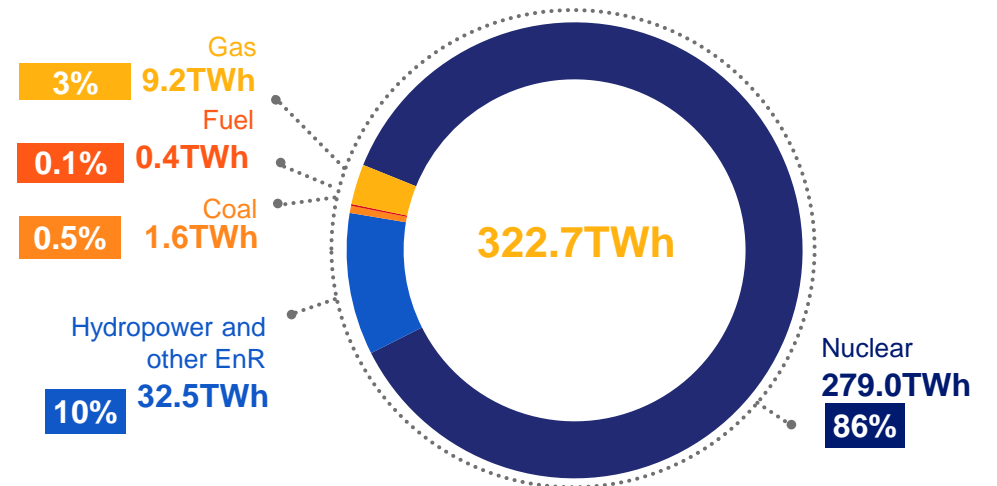
And for this country:

- Holding 100% of **EDF Renewables** (see [p.55 ff.](#)), EDF ENR, EDF International and, including gas activities (see [p.96](#))
- Shareholding in various companies o/w **Dalkia** (energy services provider and Dalkia Electrotechnics/Citelum) (see [p.94](#)) **Framatome** (see [p.45](#)) (supplier in the nuclear industry)

Installed capacity⁽²⁾



Electricity generation⁽²⁾



(1) Direct emissions, excluding life cycle analysis of generation means and fuels.

(2) Fully consolidated data as of 31/12/2022. The values correspond to the expression to the first decimal place or to the nearest integer of the sum of the precise values, taking into account rounding.

FRANCE: EDF-REGULATED ACTIVITIES (ENEDIS, ÉS⁽¹⁾ & ISLAND ACTIVITIES)

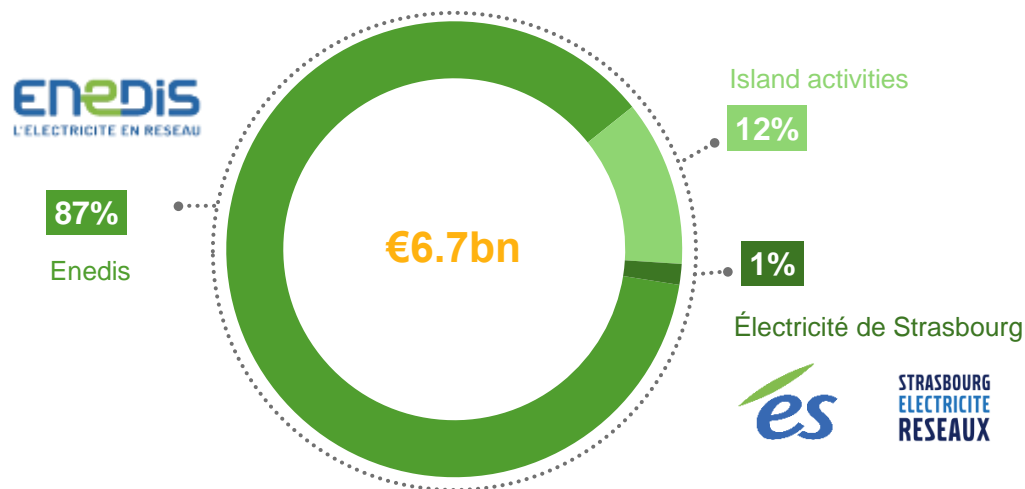
- **Enedis** (see [p.71](#))
- **The largest distribution grid in Europe** and the main distribution grid in France: **connected to 95% of the metropolitan population**
- A **regulated business model**: Enedis has the national monopoly on 386 concession contracts
- Represents usually a share of about **a quarter** in the metrics of the EDF Group: **EBITDA** (except 2022), **investments** (€4.6bn in 2022) and **headcount** (~39k)

– **€96bn net investments** planned over the period 2023-2040

– **2022 key figures:**

- **€5,8bn**: EBITDA⁽²⁾
- **38.1m** customers (o/w 28.4m EDF)
- **1.4m** km electric network

Breakdown of EBITDA



• **Island activities** (see [p.76](#))

- **Integrated business model** including generation, electricity purchases, distribution (via concessions) and supply at the regulated tariff
 - **Capacity 2.0GW⁽³⁾** (fuel 78%, hydropower and other EnR 22%)
 - **Electricity generation 6.4TWh⁽³⁾** (fuel 75%, hydropower and other EnR 25%)
 - **1.2m** of customers (electricity)

• **Électricité de Strasbourg** (see [p.76](#))

- **Electricity distribution** (15,000km electric network), **energy supply** to c0.6m customers, **energy services**, **renewable energy generation**

(1) Electricité de Strasbourg.

(2) Including in 2022, the exceptional effect of the retrocession of interconnection fees granted by RTE.

(3) Fully consolidated data as of 31/12/2022.

➤ Key points:

- Largest producer of low carbon electricity
- 9 reactors in 5 nuclear power stations, 1 coal-fired power station (end of generation in March 2023)
- Nuclear New Built: **Hinkley Point C 3.2GW under construction** (see [p.42](#))
- Project under development **Sizewell C** (see [p.42](#))
- Batteries and high-volume power connections to enable rapid **electric vehicle** charging through **Pivot Power**
- Electric vehicles charge point operator through **Pod Point**

➤ 2022 key figures:

- €1.3bn: EBITDA
- 6.1m of customer accounts (3.8m: electricity and 2.3m: gas)
- ~11,000: workforce
- 99.9%: CO₂–free generation⁽¹⁾

2022 supply market share

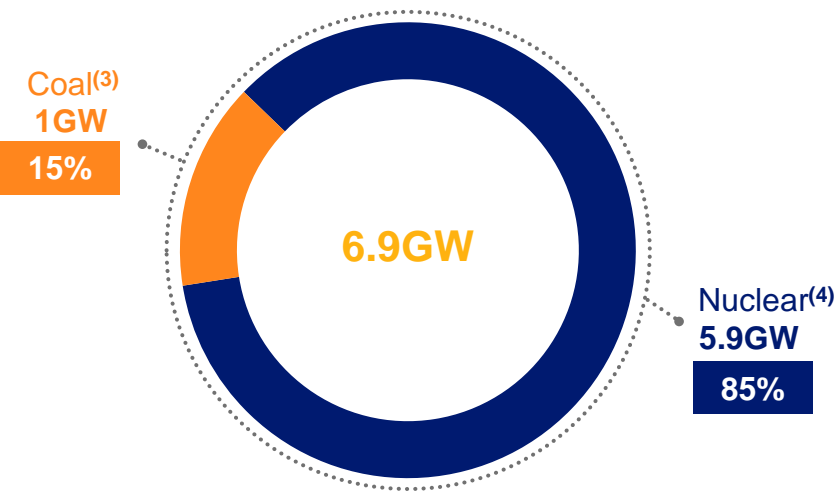
Electricity supply: ~43.6TWh ~11.2%⁽²⁾

Domestic Gas supply: ~30TWh ~9.4%⁽²⁾

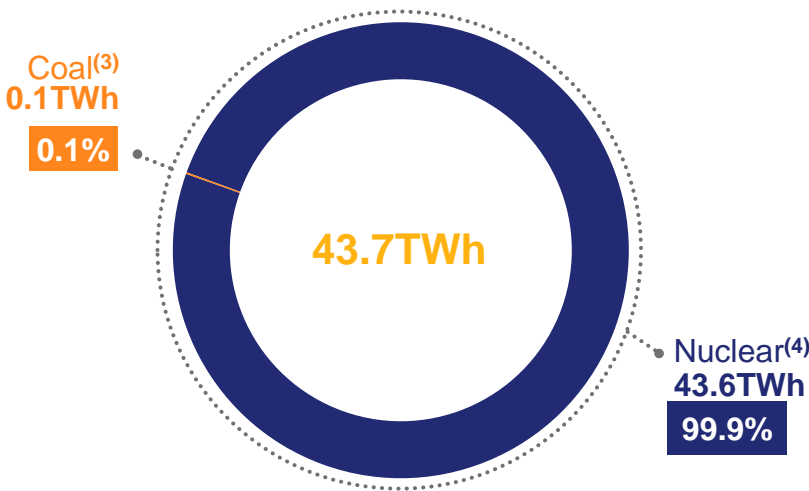
And for this country:

- Renewable energy generation from wind farms by EDF Renewables (see [p.55](#))
- Optimisation and risk management services for the EDF group as well as for third parties, via **EDF Trading** (see [p.79](#))

Installed capacity



Electricity generation



(1) Direct emissions, excluding life cycle analysis of generation means and fuels.

(2) UK Gas and Electricity market share as per Cornwall data at 30/10/2022.

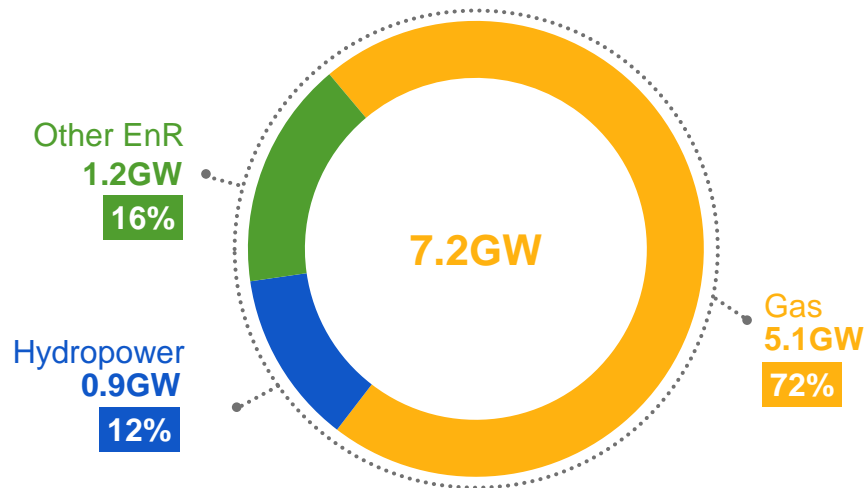
(3) The coal capacity represents a "connection input capacity". End of generation of the 2 last units of West Burton A in March 2023.

(4) The figures shown represent 100% of nuclear capacity and generation, split 80%/20% between EDF Energy and Centrica.

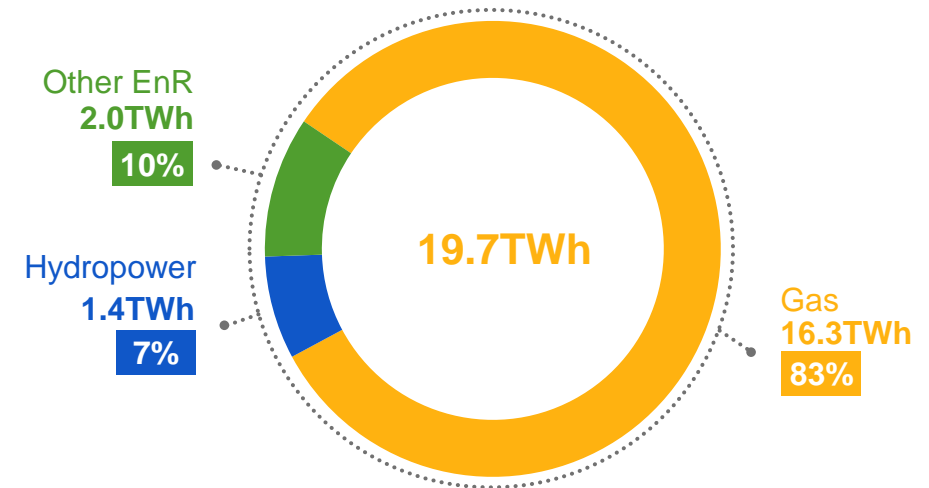
- **A major player ⁽¹⁾ in Italy, leader of sustainable energy transition:**
 - 7.2GW of installed capacity including over 2GW of renewables
 - 21% market share in Gas midstream activities, second biggest gas importer in Italy with a diversified portfolio of LT contracts independent from Russia
- **Key strategic priorities for 2030:**
 - Pursue development of renewables (from 2 **to 5GW** - 40% of generation mix)
 - Be a leader in flexible energy generation to ensure security of supply (high efficiency CCGTs (Marghera and Presenzano with lower CO₂ emissions), CCS, pumped hydro, batteries,...)
 - Enable energy transition and driving green gas development
 - Support our clients in achieving competitiveness and environmental sustainability through energy efficiency services

- **2022 key figures:**
 - Generation fleet in Italy: **107** hydropower plants, **14** thermal power plants, **53** wind farms and **56** photovoltaic power plants
 - 19.7TWh power produced, i.e. 7.2% of Italian generation
 - Biggest B2B wholesaler in Italy (37.7TWh of Electricity and 21.1Bcm of gas sold per year)
 - **14.5Bcm of natural gas imports**, i.e. 21% of Italy's natural gas imports
 - **€1.1bn**: EBITDA
 - 1,8m of B2C/SME gas, power and energy services contracts⁽²⁾
 - **~6,000**: workforce
 - **17%**: CO₂ –free generation⁽³⁾

Installed capacity



Electricity production



(1) According to the 2021 ARERA report.

(2) The number of customers corresponds to the number of electricity and gas delivery sites.

(3) Direct emissions, excluding life cycle analysis of generation means and fuels.

BELGIUM: LUMINUS AND EDF BELGIUM

➤ Luminus:

- **2nd largest player in the Belgian energy market**
- 7 hydropower plants
- Leader in wind power with 92 onshore wind farms
- Gas fleet of 1,208MW
- Owning 10.2% (316MW) of the nuclear power plants of Tihange 2 and 3, and Doel 4 (end of generation of Doel 3 in 2022). Luminus also has 100MW of drawing rights on the French Chooz B nuclear power plant

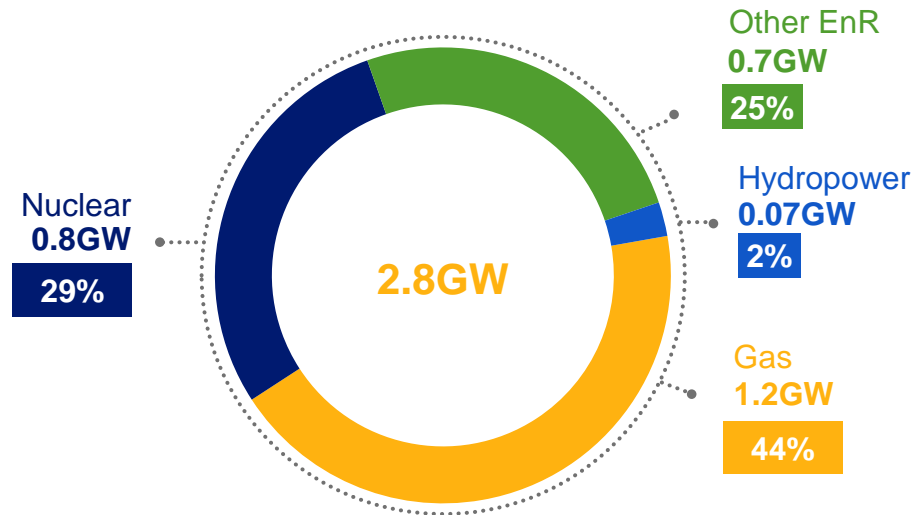
➤ EDF Belgium:

- Wholly-owned by EDF, it holds 50% of the Tihange 1 nuclear plant⁽¹⁾, or 481MW, representing 2% of Belgian generation capacity

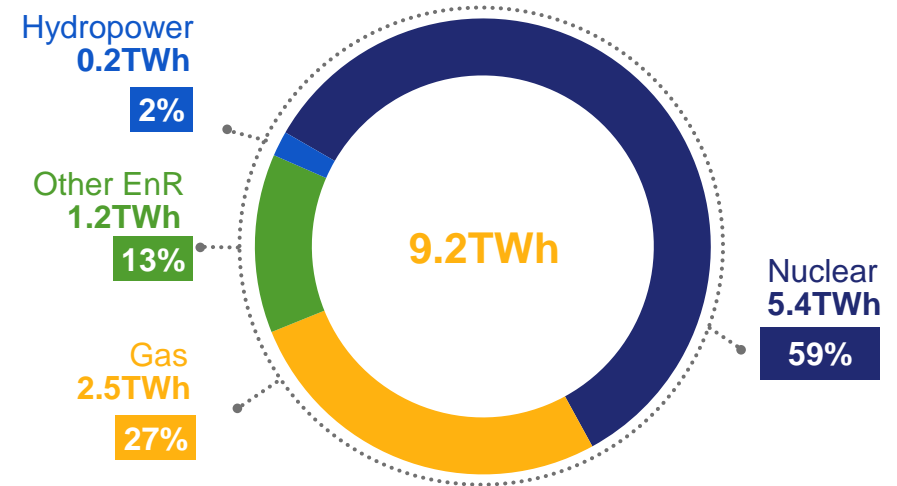
➤ 2022 key figures:

- **Luminus:** 2,289MW of installed capacity
22% electricity market share in Belgium⁽²⁾
Total electricity output of 6,9TWh in 2022
~2,2m of delivery points
- **EDF Belgium:** 481 MW of nuclear installed capacity
- **€118m:** EBITDA Belgium⁽³⁾
2.2m of customers (1.4m: electricity et 0,8m: gas)
- **~2,600:** workforce⁽⁴⁾
- **74%:** CO₂–free generation⁽⁵⁾

Installed capacity



Electricity generation



(1) 50% participation in the Tihange 1 power plant with Electrabel.

(2) As of 31/12/2021 (latest figures).

(3) Luminus SA = 61.5M€ and EDF Belgium = 57.7M€.

(4) Headcounts.

(5) Direct emissions, excluding life cycle analysis of generation means and fuels.

REST OF THE WORLD - AREAS PROFILE

North America

- **EDF Renewables:** 11.4GW net installed or in construction, mainly in the USA, and close to 17.4GW managed for own account or third parties
- **Framatome:** electricity supply to 36m households
- **Dalkia:** local energy services management and efficiency

South America

- **Brazil:** EDF Norte Fluminense **CCG** (827MW). **Sinop** hydropower plant (51% of 402MW). EDF Renewables net capacity of 526MW in **wind** power and 199MW in **solar** power
- **Chile:** flexible gas and peak generation capacity (50% of 750MW) and construction of a solar power plant (50% of 480MW), by EDF Andes
- **Peru:** microgrid solar energy project and signature of a PPA with the town of Iquitos

Africa

- **Wind:** 145MW gross in **South Africa** and commissioning of the Taza wind farm phase 1 (90MW) in **Morocco**
- **Solar:** 130MW Benban plants in **Egypt** (130MW)
- **Hydroelectric:** in **Cameroon**, construction of **Nachtigal** dam (40% of 420MW) and development of a second dam in **Kikot** (450MW) – in **Malawi**, development of an hydropower plant (350MW)
- **Biomass:** construction of the biggest plant of Western Africa in **Ivory Coast** (46MW)
- **Off-Grid kits** (distributed energy) : in South Africa, Ivory Coast, Ghana, Senegal, Kenya, Zambia and Togo – More than **2m people** supplied with electricity

Middle East

- **United Arab Emirates:** PV solar plant **DEWA III** (16% of 0.8GW). Construction of the photovoltaic project **Al Dhafra PV2** (20% of 2.1GW). Construction of high voltage subsea cables transmission system (3,2 GW) with ADNOC. Management assistance project for the construction of **Hatta** pumping station dam (0.2GW)
- **Saudi Arabia:** wind farm **Dumat Al Jandal** (0.4GW), photovoltaic project of South **Jeddah** (0.3GW)
- **Israel:** 531MW of gross renewable installed capacity, 77MW under construction

China

- **Nuclear:** two EPR nuclear reactors in **Taishan** (30% of 3.5GW)
- **Thermal-coal:** minority stake in **Fuzhou** ultra-supercritical plant (49% of 2GW), **Shandong** plants (19.6% of 3GW) and **Sanmenxia** supercritical plant (35% of 1.2GW)
- **Renewables:** net installed capacity of 380MW in **wind** and 136MW in **solar** power. In **offshore wind** energy, **Dongtai IV** (0.3GW) and **Dongtai V** (0.2GW) wind farms

Pacific Asia

- **India:** industrial agreement and offer submitted for the construction of **6 EPRs** on the **Jaitapur** site (~10GW). A roll-out smart meters project (over 1m installed). Group's installed renewables power (excl. Hydro) capacity: 0.6GW net
- **Vietnam:** Phu My 2.2 CCG in operation (0.7GW). Development of Son My 1 CCGT (2.3GW)
- **Laos:** Nam Theun 2 **hydropower** plant (1.1GW installed) & on its dam reservoir: development of a **hybrid solar farm** of 80MW



TABLE OF CONTENTS

P.4
GROUP
STRATEGY

P.30
COUNTRY
PROFILE

P.39
GROUP MAIN
BUSINESSES

P.98
FINANCIAL DEBT
& DEDICATED
ASSETS

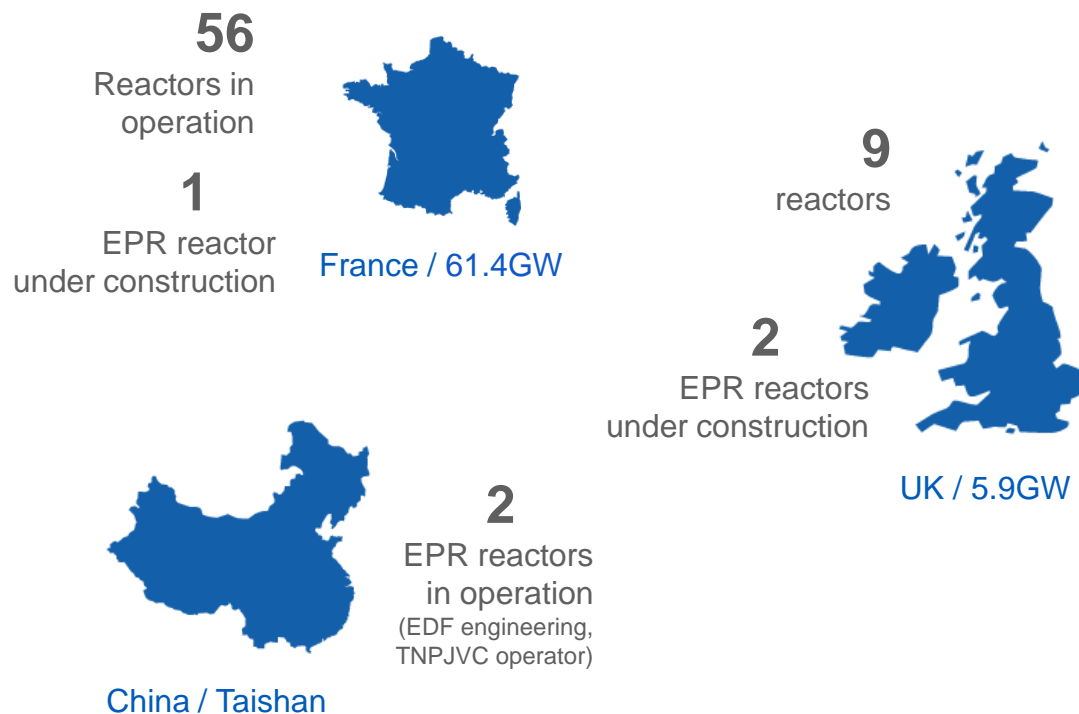
As a major player in energy transition, the EDF group is an integrated energy company active in all areas of the industry: power generation using nuclear, renewable and thermal energies; design and construction of nuclear power plants; electricity transmission and distribution; sales; energy services; energy trading



➤ NUCLEAR	P. 40
➤ RENEWABLES	P. 55
➤ THERMAL POWER	P. 68
➤ REGULATED ACTIVITIES (mainly networks)	P. 70
➤ OPTIMISATION & TRADING	P. 77
➤ CUSTOMER SOLUTIONS	P. 83
➤ ENERGY SERVICES	P. 91
➤ GAS	P. 95

EDF: UNIQUE & GLOBAL EXPERTISE AND KNOW-HOW IN THE NUCLEAR INDUSTRY

EDF, THE WORLD'S LEADING NUCLEAR OPERATOR⁽¹⁾



(1) IAEA (*International Atomic Energy Agency*), Nuclear power reactors in the world, 2022 edition.

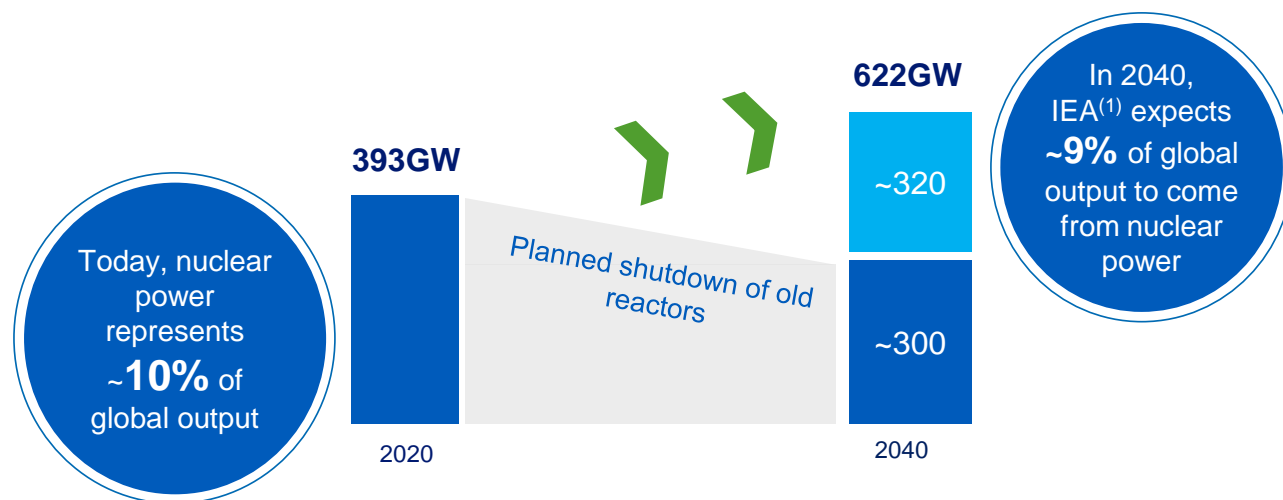
(2) Technology partnership.

EDF MANAGES THE ENTIRE LIFECYCLE OF NUCLEAR GENERATION FACILITIES: DESIGN, OPERATION AND DECOMMISSIONING

- **Development** of an optimised version of the EPR (**EPR 2**) (see [p.44](#)), which could, in the long term, expand the French nuclear fleet's offer **in France and for export**.
Pooling of EDF and Framatome engineering teams in a joint subsidiary **Edvance** for **new projects in France and abroad**
- **Development** of a type of **SMR, Nuward™** (see [p.43](#)), with the CEA, TechnicAtome, NavalGroup, Framatome and Tractebel⁽²⁾
- **Aim to continue the operation, safely**, of its reactors **beyond 40 years** in France and to build the success of the first reactors to pass their fourth ten-year inspection to extend their operating life.
EDF plans to invest €33bn over the period 2022-2028, as part of the **“Grand Carénage”** programme (see [p.48](#))
- **Construction of EPR-type reactors** (France, the UK)
- **Excell Plan, ongoing** to strengthen the industrial quality, the skills, and the governance of the French nuclear industry (see [The excell plan p.15](#))
- Presence of EDF in the French and international markets for the **decommissioning** of nuclear power plants (see [p.50](#)) and **radioactive waste treatment** facilities (see [p.52](#))
In the UK, EDF Energy responsible for the AGR power plants' defueling, and Nuclear Decommissioning Authority (NDA) responsible for subsequent decommissioning activities

UNIQUE POSITIONING IN NUCLEAR NEW-BUILD

WORLD NUCLEAR CAPACITY EXPECTED TO EXPAND OVER THE NEXT 20 YEARS



- Until 2030, the electric share in energy consumption will sharply raise and is planned to reach **32% in 2040**, compared to 20% in 2021. It represents a +20,000TWh_e growth over the period
- Up to 871GW of installed nuclear capacity** will be required to **reach carbon neutrality by 2050 worldwide** according to the IEA, more than a doubling compared to the level at end 2020

(1) International Energy Agency's Sustainable development, scenario based on 2021 data (latest publication).

(2) Final Investment Decision.


EDF UNIQUE POSITIONING ON GLOBAL NEW NUCLEAR BUILD GROWTH

2 EPR reactors

in operation since end-2019

2 
China / **Taishan**
3.5GW

- 1st Unit: start of commercial operation on 13 December 2018
- 2nd Unit: start of commercial operation on 7 September 2019

1 
France / **Flamanville 3**
~1.6GW

- Entering the test phase
- Penetration welds repairing finished
- Target fuel loading date of Q1 2024

2 
UK / **Hinkley Point C**
3.2GW

- Final Liner Ring has been lifted onto 1st Unit
- 1st Unit Reactor Pressure Vessel delivered to site in February 2023
- Electricity generation of the first reactor expected in June 2027

- Development of an additional nuclear construction project **in the UK: Sizewell C** (3.2GW). In November 2022, the UK Government announced its decision to invest c. £700m to support the project's continued development. This project is eligible for funding under the Regulated Asset Base funding model. Sizewell C's construction remains subject to EDF taking a FID⁽²⁾
- EDF has submitted bids for the development or construction of **international projects** (Jaitapur in India (engineering for six EPRs (~10GW) to be built by NPCIL), participation to a tender in Czech Republic, non bidding offer in Poland)

NEW NUCLEAR: SMR (SMALL MODULAR REACTOR) NUWARD™ PROJECT

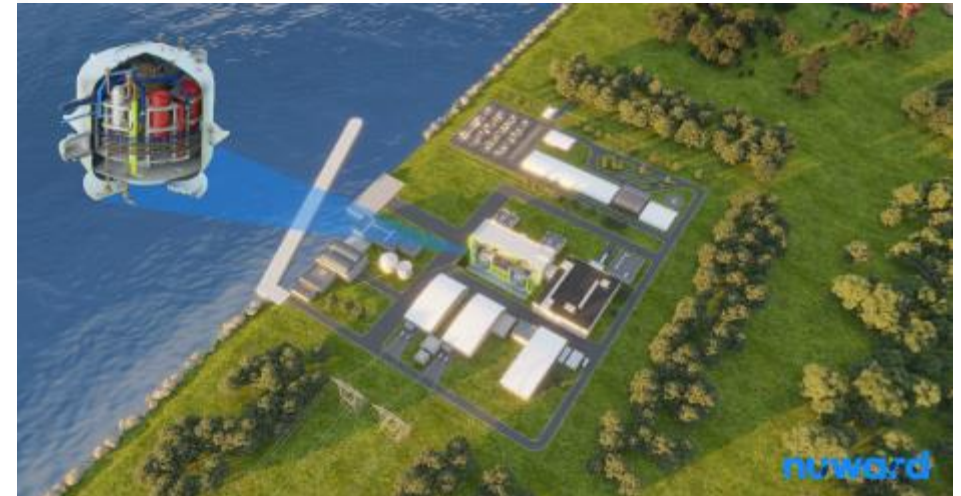
PROJECT

- Development of NUWARD™, a small modular reactor (SMR), in technical partnership with CEA, Naval Group, TechnicAtom, Framatome and Tractebel
- Nuclear plant of two pressurized water reactors (PWR) of 170MW each
- Pre-evaluation of the design conducted by the ASN, in collaboration with the Czech and Finnish safety authorities to accelerate the international licensing



PROGRESS

- Currently in the « Conceptual Design » phase (setting main design options and starting to size main systems and components)
- The French State has granted €50m of subsidies to the Nuward project in December 2020 as part of the recovery plan “Plan de relance” (o/w €45m cash in). Additional support of €500m announced by the French President in February 2022
- In December 2022, signature by EDF and Fortum of a cooperation agreement for joint exploration of development opportunities for SMRs and large nuclear reactors in Finland and Sweden



EUROPEAN PRESSURISED REACTOR 2 (EPR2) IN FRANCE

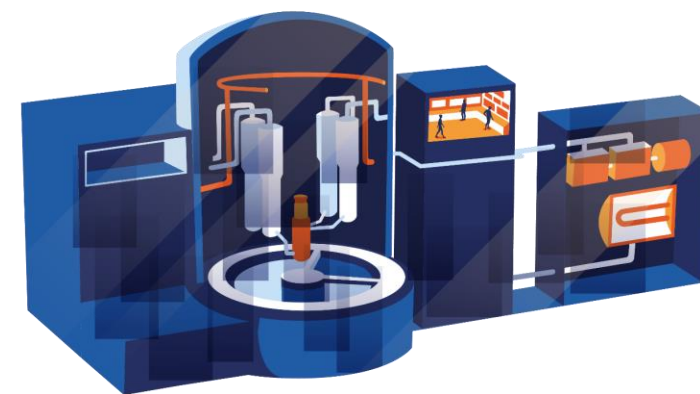
MAIN ASPECTS OF THE PROJECT

- Electrical power of an **EPR2 nuclear power station: ~1.6GW**
- **A programme of three pairs of reactors (six EPR2s)** to benefit from volume effects in technological terms, notably in equipment purchasing and construction-phase services, as well as later in operation and maintenance.
- Feasibility studies for **8 additional reactors**
- **Integrating feedback** from all EPR sites worldwide and from the fleet in operation
- **An upgrade in nuclear reactor as in the EPR:** in particular the same security level (one of the highest in the world), the same power and environmental performance

PROVISIONAL SCHEDULE

- Proposal by EDF and nuclear sector for an execution programme presented to the French government in May 2021 (and its actualisation target during Summer 2023) for the sites of Penly, Gravelines and a third one (Bugey or Tricastin)
- First EPR2 pair of reactors on Penly site scheduled to be commissioned between 2035 and 2037
- The construction schedule proposed by EDF and the nuclear sector is based on one pair of EPR2s every 4 years, with 18 months between each production unit of the same pair

EPR2 design



FRAMATOME, A MAJOR INTERNATIONAL PLAYER IN THE NUCLEAR INDUSTRY

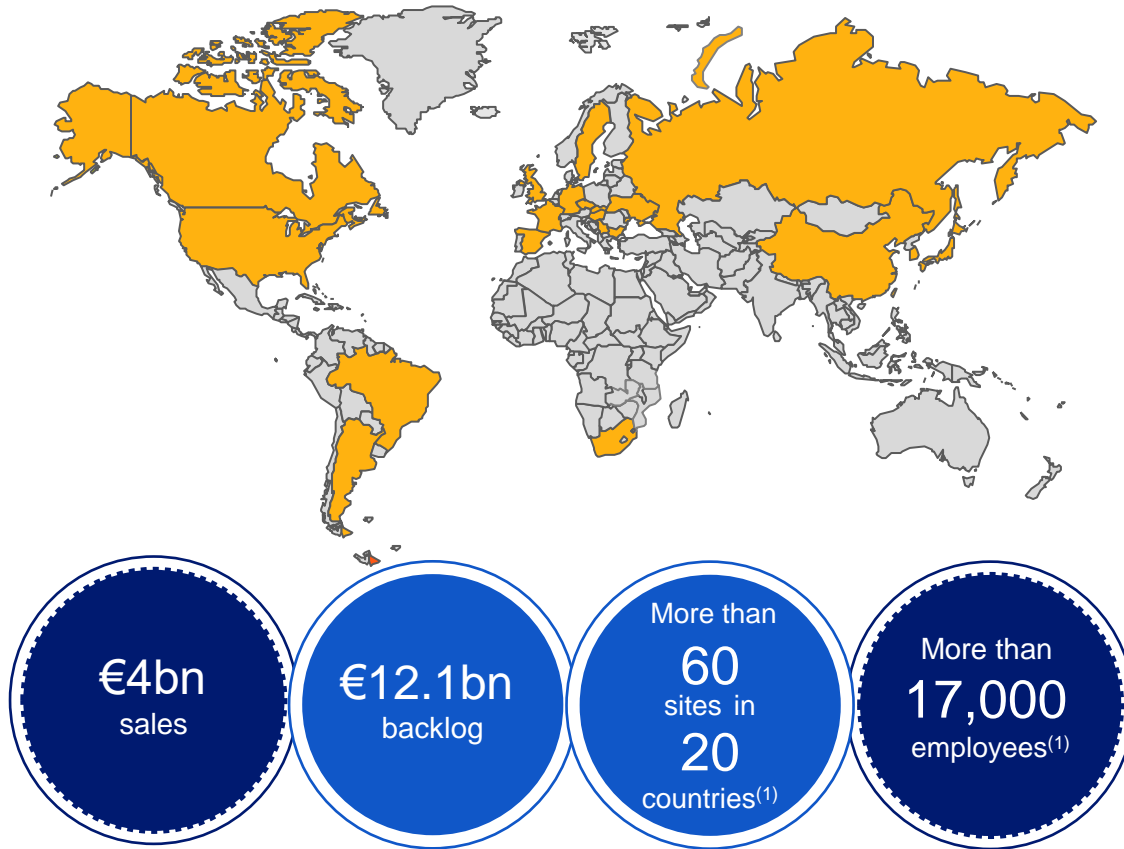
€328m: EBITDA⁽¹⁾

€3.75bn: order intake in 2022 (of which ~60% outside the Group)

Intervention on more than **300** of the ~**430** reactors in the world

Presence in the defense and healthcare sectors

An international presence



(1) Data at end-2022, contribution at EDF Group consolidation level.

Major supplier in the nuclear industry

Designer and supplier of nuclear steam supply systems and nuclear equipment, services, fuel and control systems:

Business units

- **Management of major nuclear projects** (construction projects and replacement of major components,...): partner of EDF in the construction and commissioning of 5 EPR reactors (Flamanville 3 in France, Taishan 1 and 2 in China, Hinkley Point C 1 and 2 in the UK)
- **Engineering, licensing and R&D** (nuclear steam supply systems, future reactors ...)
- **Nuclear fuel design and supply**: 230,000 loaded assemblies in more than 125 operating reactors worldwide
- **Equipment manufacturing** (vessel, steam generators,...): > 100 plants equipped by Framatome in 11 countries
- **Instrumentation and control**
- **Services activity**

EDF NUCLEAR FLEET IN FRANCE & IN THE UNITED KINGDOM

In France

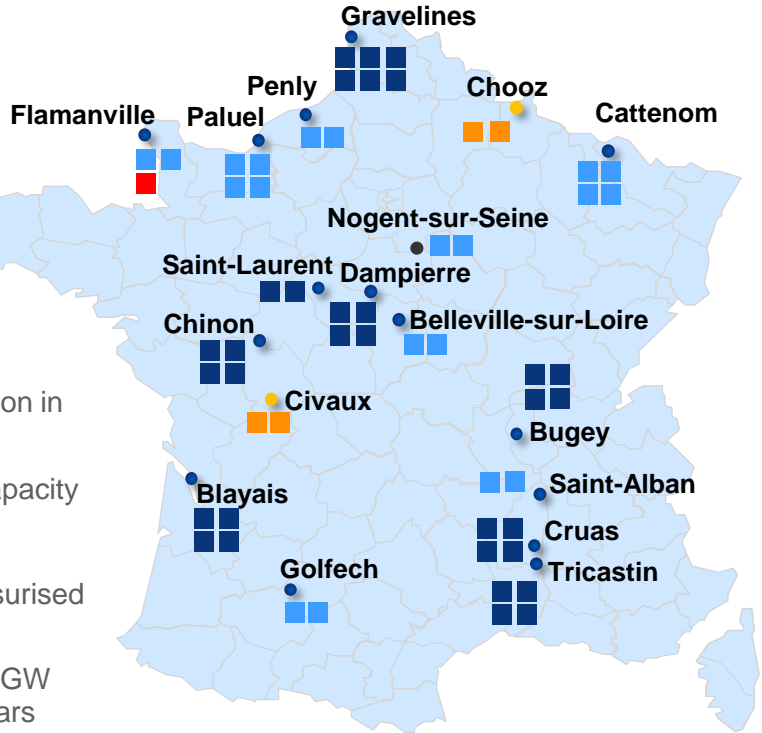


~ 61%⁽¹⁾ of French power generation in 2022

56 reactors in operation with a capacity of 61,370MW in 18 sites

A unique technology, PWR (Pressurised Water Reactors), 3 series:

- 900MW 32 reactors 29GW with an average age of 40 years
- 1,300MW 20 reactors 26GW with an average age of 34 years
- 1,450MW 4 reactors 6GW with an average age of 22 years



In the United Kingdom

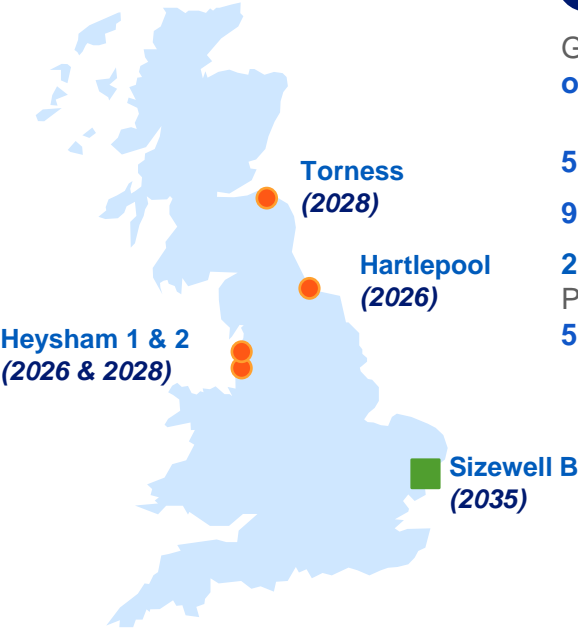


Generated ~12.5% of UK output in 2022⁽²⁾

5 nuclear power stations

9 reactors in operation

2 technologies (AGR and PWR), with total capacity of 5.9GW⁽³⁾



- Advanced Gas-cooled Reactor (AGR)
- Pressurised Water Reactor (PWR)

(2022) In brackets is mentioned the planned closure date

(1) The total French electricity output reached 459TWh in 2022 incl. Corsica and adjusted from weather effect (*Bilan électrique* 2022 of RTE).

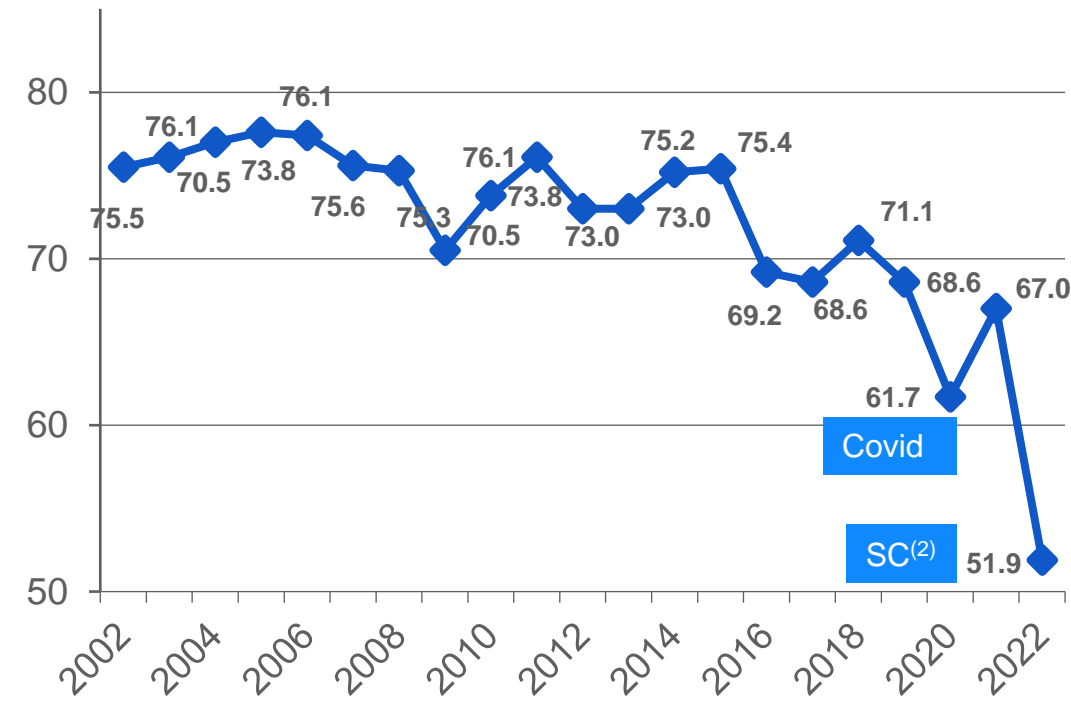
(2) 100% EDF Energy Nuclear Generation output out of total UK Generation as per WMO estimate.

(3) 5.9GW capacity split 80%/20% between EDF Energy and Centrica. In 2022, end of generation of Hunterston B Reactor 4 and Hinkley Point B. In March 2023, the future end of generation of the 2 reactors of Heysham 1 and Hartlepool have been postponed from 2024 to 2026.

CHANGE IN LOAD FACTOR⁽¹⁾ AND NUCLEAR OUTPUT

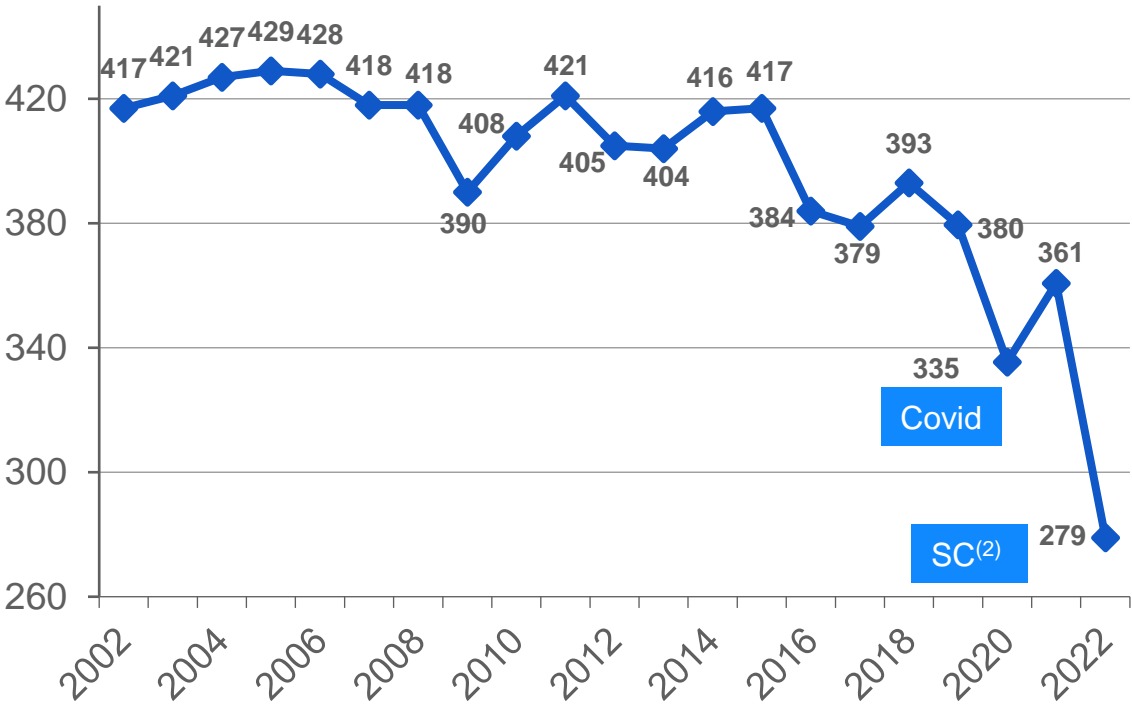
Annual load factor of nuclear fleet in France

Load factor (%)



Net output of nuclear fleet in France

TWh



(1) Load factor rate is the ratio of energy generated to the maximum theoretical energy (the energy generated if the installed capacity were operated year-round).

(2) Stress Corrosion in 2022. Decrease linked to a lower availability of the nuclear fleet, mainly due to the control and repair programme on the pipes affected by the stress corrosion phenomenon.

EXISTING NUCLEAR FLEET AND *GRAND CARÉNAGE* PROGRAMME

INDUSTRIAL STRATEGY

Industrial strategy to continue the operation of nuclear plants after 40 years:

- Technical capacity of the plants to **operate beyond 40 years** supported by international benchmarks for similar technologies
- Extension from 40 to 50 years of the depreciation period of the **900MW nuclear fleet** from 1 January 2016. During 2022, 6 reactors successfully completed their 4th ten-year inspection and thus passed the 40-year milestone (Dampierre 1, Bugey 5, Gravelines 1, Gravelines 3, Dampierre 2, Tricastin 3) and one ten-year inspection is ongoing (Blayais 1). At 31 December 2022, 10 reactors have successfully finalised their 4th ten-year inspection
- Extension from 40 to 50 years of the depreciation period for the **1,300MW nuclear fleet** from 1 January 2021, following in particular, the ASN's decision of 23 February 2021⁽¹⁾ and the success of the first 4th ten-year inspection on Tricastin 1
- Strategy compatible with the current multi-year energy programme for France (PPE 2018-2023) and the French Law removing the 50% of nuclear power from the energy mix in 2035

“GRAND CARÉNAGE PHASE 2” PROGRAMME

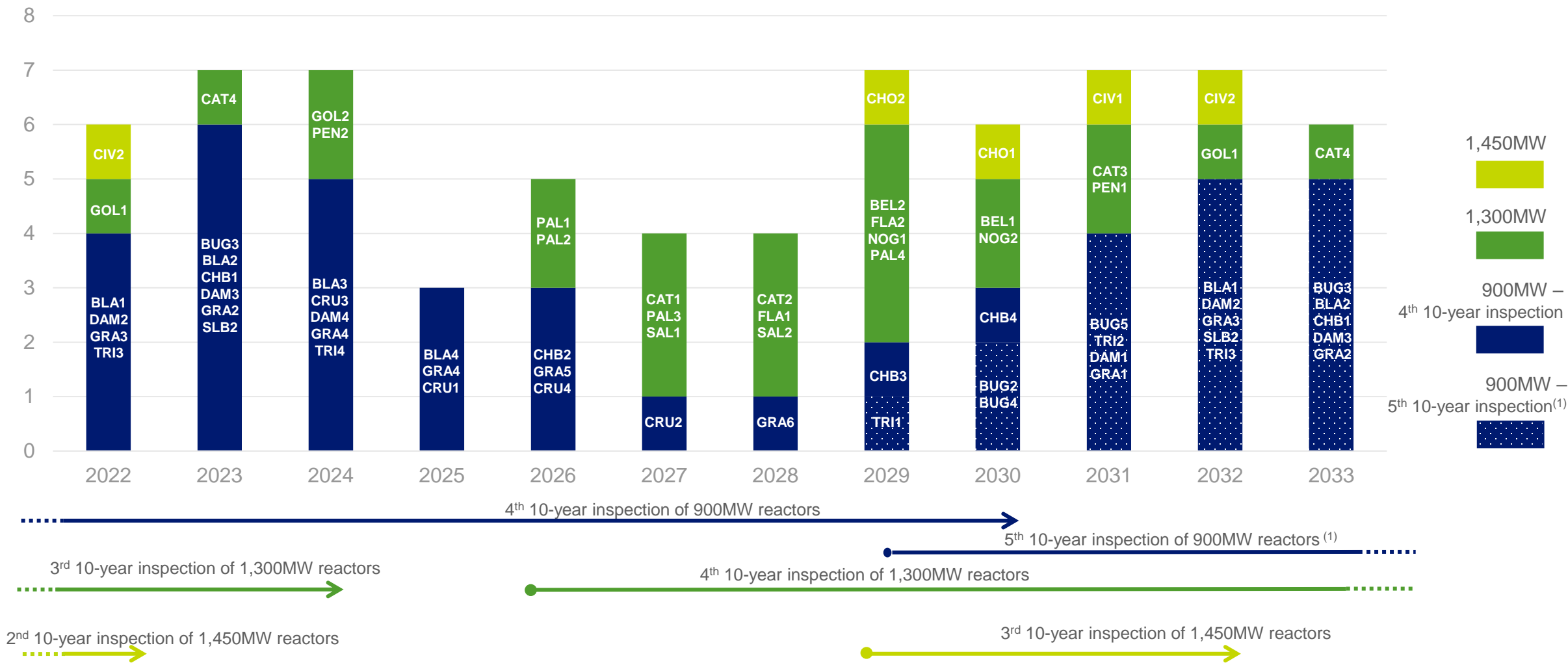


- In 2022, EDF launched the second phase of the *Grand Carénage* programme with a new investment scope for the period 2022-2028: capex plan of €33bn or €4.7bn/year (estimate at 31 March 2022)
This expenditure will **improve fleet safety** and **ensure the necessary capital investments** for operations such as the continuation of the 4th ten-year outage programmes for 900MW reactors, studies and the beginning of implementation for 4th ten-year outages for 1,300MW reactors and preliminary studies for the continued operation of 900MW reactors beyond 50 years
- In addition, the work on stress corrosion leads to an estimated capital expenditure of €0.8bn (estimate in 2022) over the period 2022-2024

(1) Decision on the conditions for continued operation of the 900MW reactors for the ten years following their fourth 10-year inspection.

10-YEAR INSPECTIONS OF THE NUCLEAR FLEET

Number of 10-year inspections

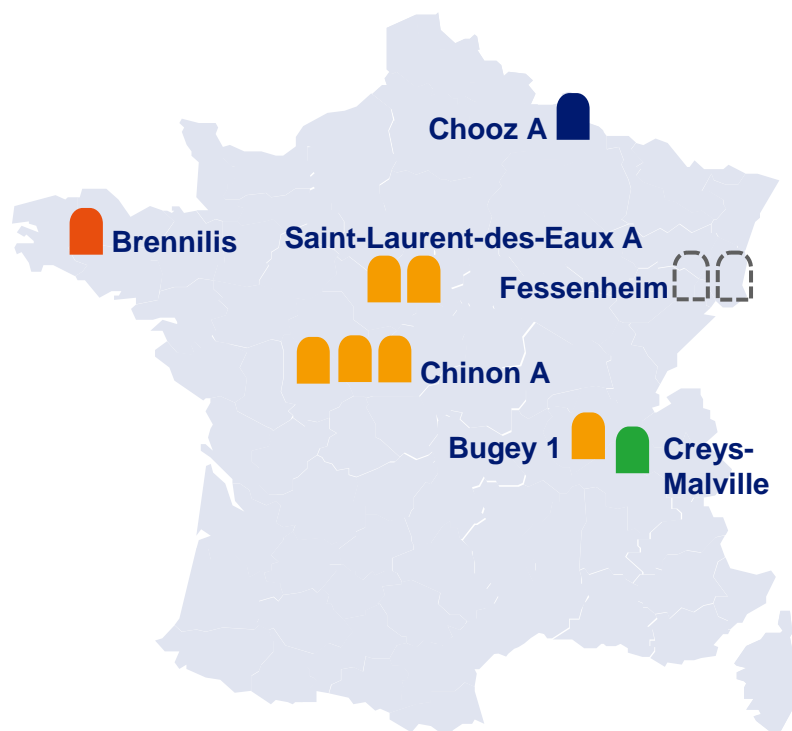







In 2029, Tricastin 1 would be the first 900MW series reactor to realise its 5th 10-year inspection

NB: forecast data on 3 January 2023.

(1) 5th 10-year inspections, subject to decisions taken and authorisations issued.

DISMANTLING: THE FINAL STEP IN THE LIFE OF A PLANT



-  Pressurised Water Reactor (PWR)
-  Heavy Water Reactor
-  Graphite Reactor
-  Fast Neutron Reactor
-  Pressurised water reactor in pre-dismantling phase

3 periods in the life of a plant

Construction - Operation - Dismantling

As the operator of the nuclear plants, EDF is in charge of these three steps and is currently dismantling first generation nuclear plants (shut down up to the 1990s) and prepares the dismantling of the two reactors of Fessenheim

11

REACTORS UNDER
DISMANTLING IN
FRANCE

4

DIFFERENT
TECHNOLOGIES

7

INDUSTRIAL SITES

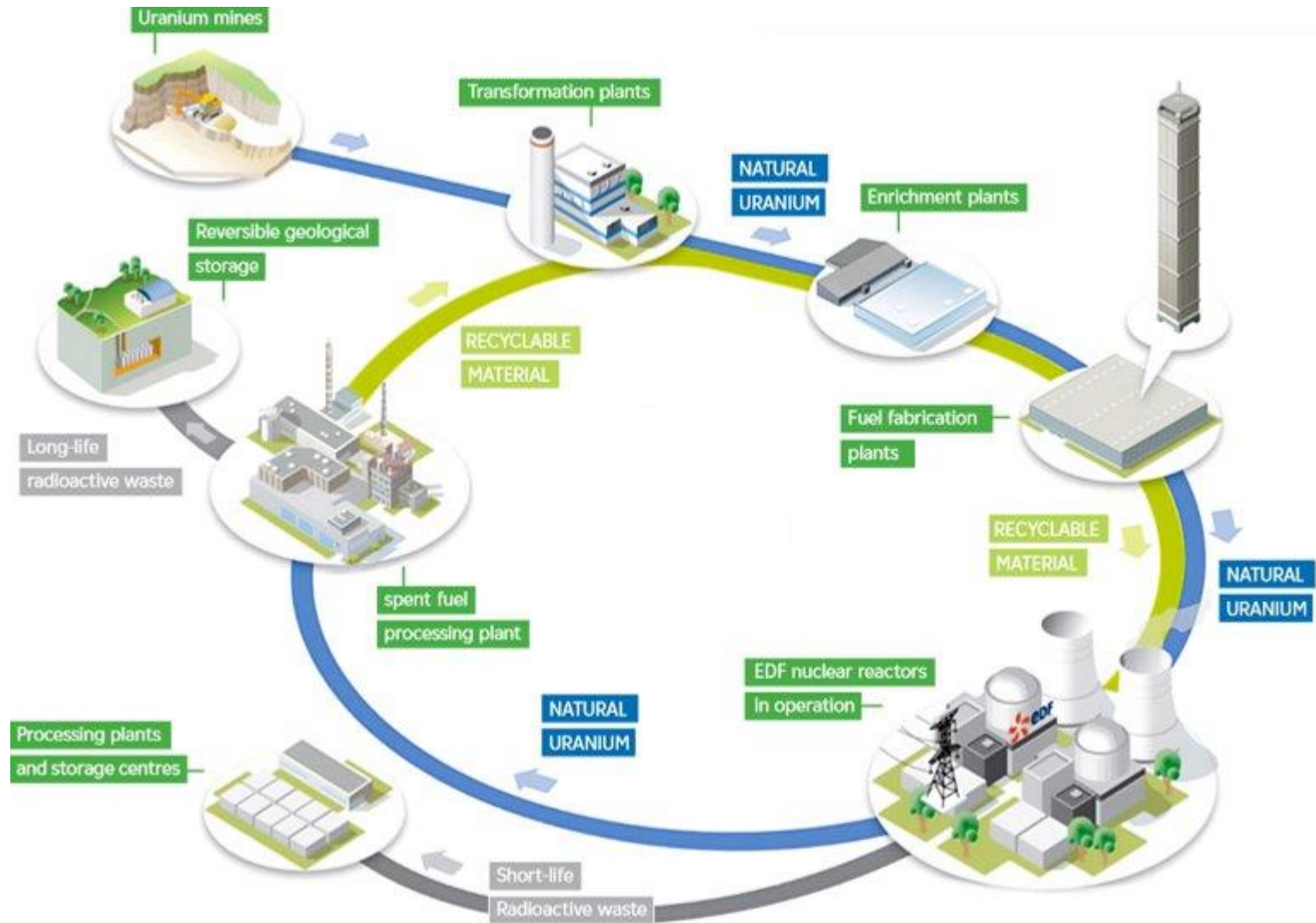
The nuclear plants currently in operation are all “PWR”

The **duration** of a Pressurised Water Reactor dismantling is **15 years** starting from the dismantling decree

3 key steps: 1- Unloading the fuel and draining all systems (**after which 99.9% of the on-site radioactivity has been eliminated**). 2- Dismantling excluding the reactor building 3- Dismantling the reactor building

The duration of the operations may vary for other technologies (NUGG, LWR, FNR) according to the complexity of works that have to be completed

STAGES OF THE NUCLEAR FUEL CYCLE IN FRANCE



4gCO₂eq/kWh

EDF carbon footprint of nuclear life-cycle⁽¹⁾

IPCC 2015 data worldwide
(in gCO₂eq/kWh)

- Coal:	1,040
- Fuel:	840
- Gas:	490
- Solar PV:	48
- Hydro:	24
- Nuclear:	12
- Wind:	11

RADIOACTIVE WASTE MANAGEMENT

	TYPE OF WASTE	EXAMPLE	POSITION/STORAGE
SHORT-LIVED WASTE 90% of waste 0.1% of radioactivity Their radioactivity is halved over a period of 31 years or below	VERY-LOW-LEVEL WASTE	Waste resulting from the maintenance work and decommissioning of nuclear installations (concrete, scrap, piping, work clothes, ...)	On the surface at the Morvilliers storage centre managed by ANDRA ⁽¹⁾
	SHORT-LIVED INTERMEDIATE AND LOW-LEVEL WASTE	Waste from the processing of liquid and gaseous effluents of operating plants; some decommissioning waste	On the surface at the Soulaines storage centre, managed by ANDRA ⁽¹⁾
LONG-LIVED WASTE 10% of waste 99.9% of radioactivity	LONG-LIVED, LOW-LEVEL WASTE	They essentially are graphite waste from the dismantling of first-generation plants	Warehousing at the production site pending the construction of a storage centre. Storage project under review.
	LONG-LIVED INTERMEDIATE-LEVEL WASTE	Metallic structures of the fuel assemblies, other operating or dismantling waste near the core of the reactor	Metallic structures enclosing the fuel warehoused at the plant in La Hague , once the fuel is removed. Operational and dismantling waste close to the core sent to ICEDA, pending the geological storage industrial centre (Cigéo) ⁽²⁾
	HIGH-LEVEL WASTE	Waste from the processing of spent fuel	Warehousing at the Orano site in La Hague pending the geological storage industrial centre (Cigéo) ⁽²⁾

(1) National Agency for Radioactive Waste Management (Agence Nationale pour la Gestion des Déchets Radioactifs).

(2) For more information about [Cigéo](#), please see p.53.

CIGÉO – A DEEP-STORAGE INDUSTRIAL CENTRE

- French deep-storage project for Long-lived Intermediate-level and High-level radioactive waste, generated mainly by the existing French nuclear facilities (nuclear power industry, research, defense, etc.). **Such waste represents 3% of the total volume of radioactive waste and is alone responsible for 99% of waste radioactivity**
- The French law of 28 June 2006 tasked the National Agency for Radioactive Waste Management (**ANDRA**) with designing, constructing and **operating Cigéo**
- The waste producers (mainly EDF, CEA and ORANO) will finance the construction and the operating costs of Cigéo. The share borne by EDF is provisioned and covered by dedicated assets
- The authorisation request of the Cigéo creation has been officially submitted in Q1 2023. It plans the site to be located in eastern France, on the border between the Meuse and Haute-Marne
- The first waste is expected to be delivered between 2035 and 2040

The principle of reversible storage in deep geological layers

- After 15 years of research, assessments and a public debate, principle adopted by the French Law of 28 June 2006 as the safe solution for the long-term management of this type of waste, without shifting the burden onto future generations.
- The principle of reversibility for the entire duration of the operation (at least 100 years) in order to adapt Cigéo to possible changes

Secure and robust facilities that are adaptable on two levels

- On the surface: facilities to receive and prepare waste shipments, and to undertake excavation work and the progressive construction of underground structures
- Below ground: galleries located about 500 meters deep in a stable and impermeable layer of argillaceous rock, chosen for its containment properties over very long periods (several hundreds of thousands of years)
- Scalable architecture of the underground facilities during operation, depending on feedback and available technologies



Cigéo facilities on the surface



Cigéo underground galleries modelisation

CYCLIFE: A GROUP DEDICATED TO DECOMMISSIONING AND RADIOACTIVE WASTE TREATMENT OFFERINGS

- The Group “**Cyclife**” is in charge of nuclear decommissioning and waste treatment for the French and international market.

Cyclife offers melting and incineration solutions to reduce the volume of short-lived radioactive waste and, depending on local regulations, to recycle very low-level metal waste.

Cyclife has **three plants, in France, Sweden and the United Kingdom**, and mobile machines that work directly on operating nuclear power plants.

Cyclife is also working on developing innovative waste treatment technologies alongside industrial partners

EDF radioactive waste treatment 3 facilities⁽¹⁾

The UK (Workington)

Metal waste treatment
(clean up, cutout)⁽¹⁾:
3,000t/year

~ 120 employees

Sweden (Nyköping)

Smelting⁽¹⁾: 5,000t/year
Incineration⁽¹⁾: 500t/year
Pyrolysis⁽¹⁾: 50t/year

~ 100 employees

France (Codolet)

Smelting⁽¹⁾: 3,500t/year
Incineration⁽¹⁾: 6,000t/year

~ 300 employees



France



Germany



Sweden



UK



engineering



digital solutions



Aquila Nuclear
Engineering



GRAPHITECH



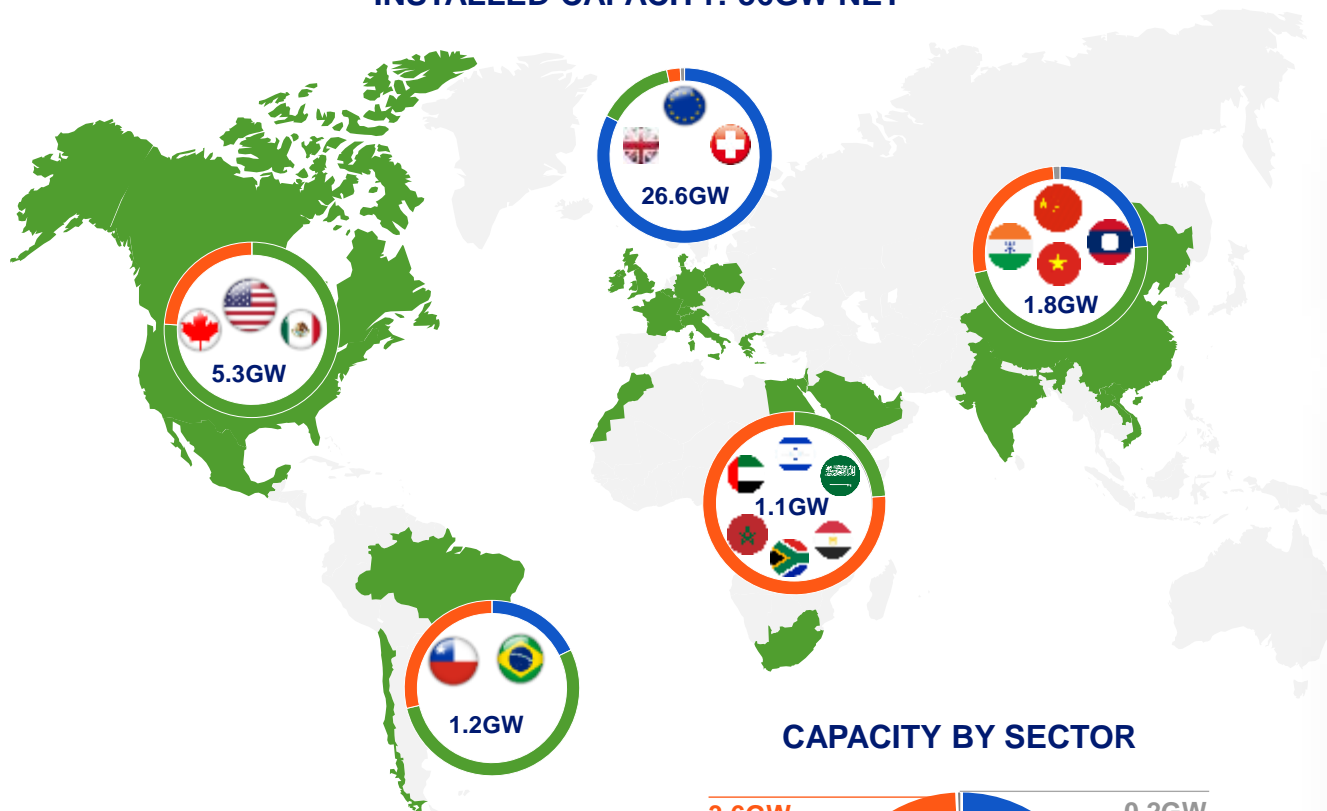
Waste2Glass



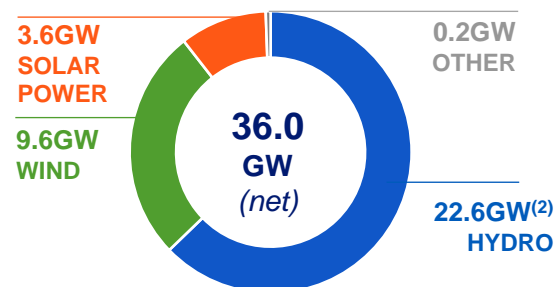
➤	NUCLEAR	P. 40
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➤	GAS	P. 95

EDF, THE EUROPEAN LEADER IN RENEWABLE ENERGIES

INSTALLED CAPACITY: 36GW NET⁽¹⁾



CAPACITY BY SECTOR



A DIVERSIFIED MIX WITH 36GW IN OPERATION

- **22.6GW of hydropower**
- **13.2GW of wind and solar power**
- **0.2GW others** (biomass, geothermy, ...)

HYDROPOWER

- **Leading European producer** of hydropower
- More than **400 production sites** worldwide

A GLOBAL LEADER IN WIND AND SOLAR ENERGY

- **3.6GW gross** commissioned in 2022
- **7.1GW gross** currently under construction (1.4GW in onshore wind, 1.4GW in offshore wind, 4.3GW in solar)

NB: situation at 31/12/2022.

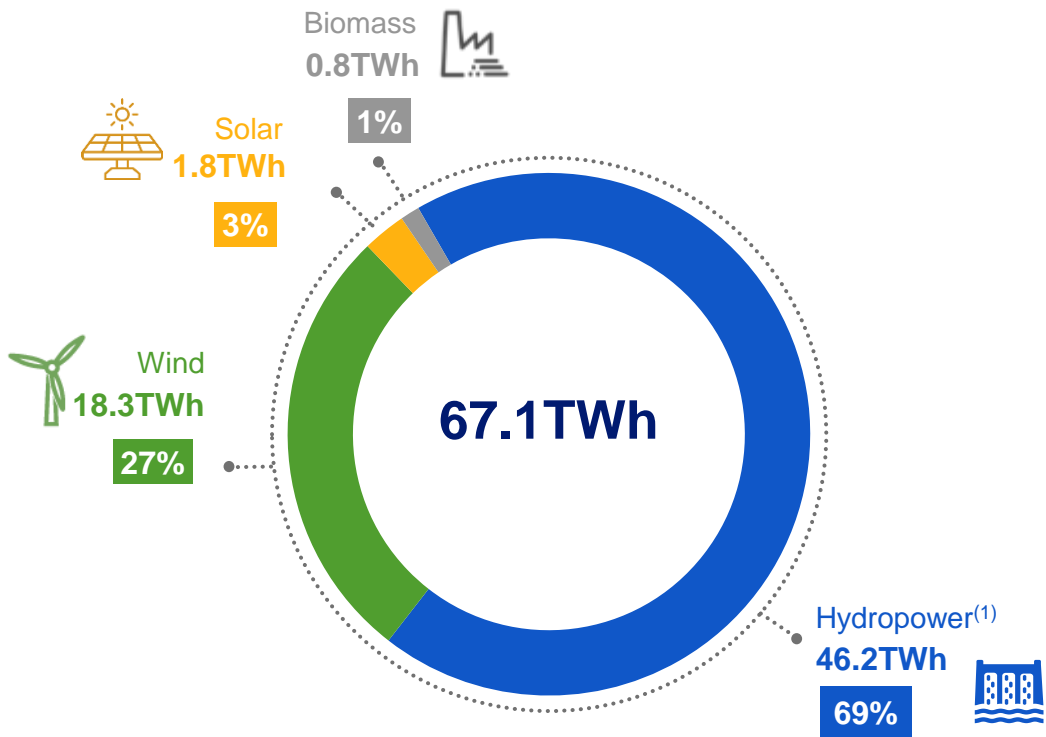
(1) Installed capacity shown as net, corresponding to the consolidated data based on EDF's participation in Group companies, including investments in affiliates and joint ventures.

(2) Including sea energy: 0.24GW.

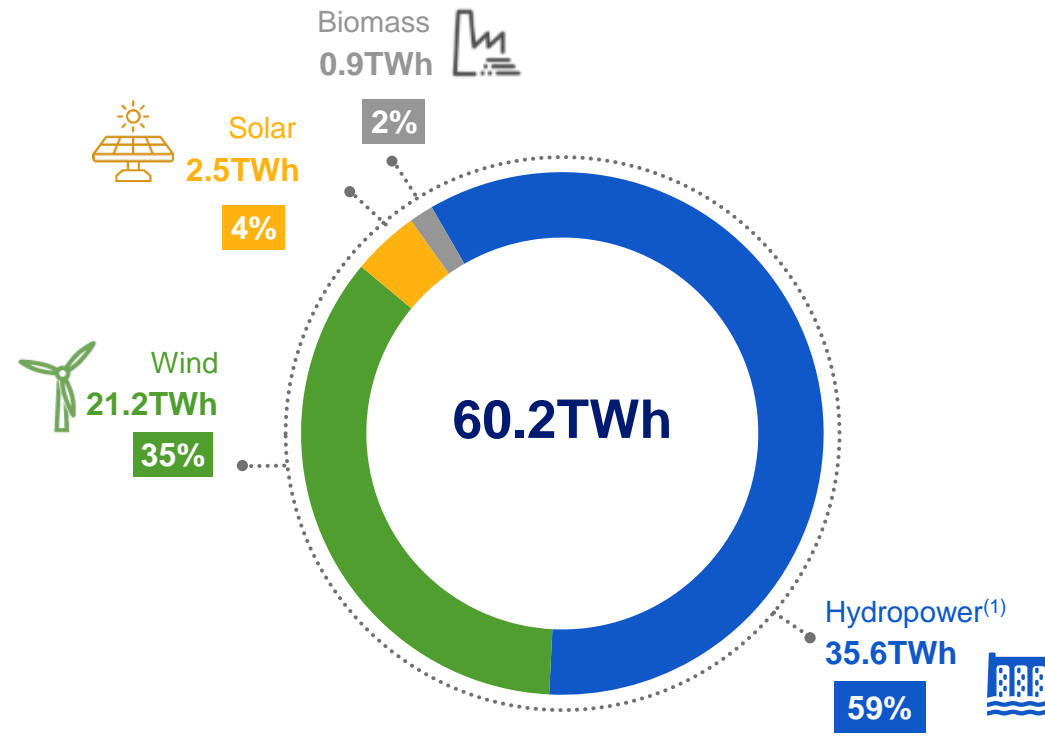
RENEWABLE OUTPUT

Output from fully consolidated entities

2021



2022

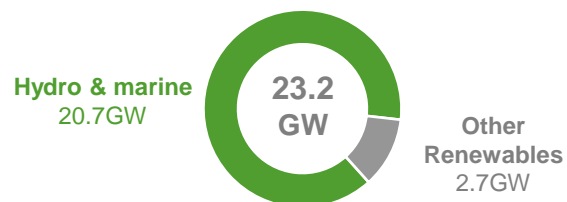


(1) Hydropower output includes tidal energy for 549GWh in 2022 and 543GWh in 2021. Hydro output after deduction of pumped volumes is 28.2TWh in 2022 and 40.3TWh in 2021.

FRENCH HYDROPOWER – A DIVERSIFIED & FLEXIBLE FLEET

THE MAIN SOURCE OF RENEWABLE POWER IN FRANCE

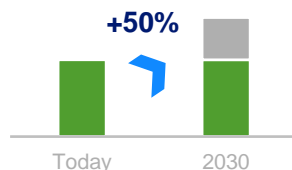
Net Renewable installed capacity⁽¹⁾ of the Group in France



- **425 plants** in France (mainland), average age of **77 years**
- Covering the different kinds of hydropower facilities:
 - Run-of-river / Pondage water / Reservoirs (lake-supplied) / Pumped storage / Tidal power

UNIQUE STORAGE VALUE, CRITICAL FOR THE ELECTRICITY SYSTEM

Estimated weekly flexibility needs⁽²⁾



- **Hydropower France provides ~14GW of storage**
 - Reservoirs: 8.2GW
 - Pumped storage: 5.0GW
 - ▢ Including the 1.7GW Grand'Maison facility, the largest European storage asset
- **Only sizeable & cost competitive** electricity storage technology

AMONG THE MOST FLEXIBLE AND REACTIVE GENERATION TECHNOLOGIES

Response time to reach full capacity of plants



- **Allows quick adjustments to within-day fluctuations in the supply-demand balance**
 - Consumption peaks
 - Non forecasted loss of generation capacity
- Hydropower is the **most significant contributor to ancillary services**

(1) Power generation capacity, in proportion of the share the EDF group held in each asset.

(2) Source: RTE (*Bilan prévisionnel*).

EDF'S HYDROPOWER FLEET

EDF operates ~80% of mainland France's hydropower capacity and between 65% and 70% of hydroelectricity energy output.

EDF develops its hydropower activities in order to increase their power and availability.

EDF's expertise is also recognised internationally

➤ FRANCE

- **Improving the performance** of the existing generation fleet and impact on environment, notably biodiversity
- Developing **storage with Pumped Storage Hydropower Plants (PSHP)**: EDF is reviewing several PSHP projects based on existing plants
- Promoting **complementarity with intermittent renewable energies**. Example: in Lazer, EDF achieved a first in France by using the surface of a hydropower dam reservoir for a **floating photovoltaic** project

➤ INTERNATIONAL DEVELOPMENT

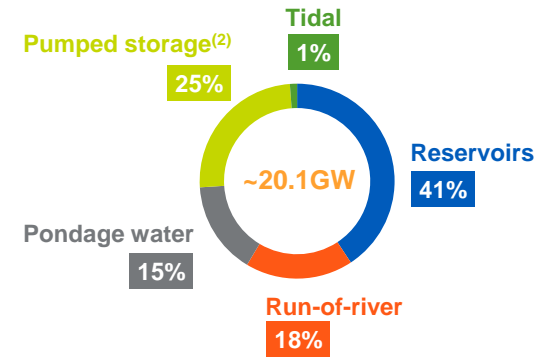
- **Developing engineering and operating service offers** internationally
- **Hatta (UAE)** : continuation of the management assistance of a PSHP project (250MW). 64% achieved on March 2023 and end of construction scheduled at the end of the first half of 2024.
- **Nachtigal⁽³⁾ (Cameroon)** : design, construction and operation for a period of 35 years of a 420MW dam. More than 80% achieved at 31/12/2022. Project's expected total cost: €1.2bn. Operational commissioning planned for S2 2024

(1) The average production over 60 years has been re-evaluated on the basis of observed climate change.

(2) Only gravity capacity is counted in the Pumped storage; pumped energy is not taken into account.

TURBINE CAPACITY

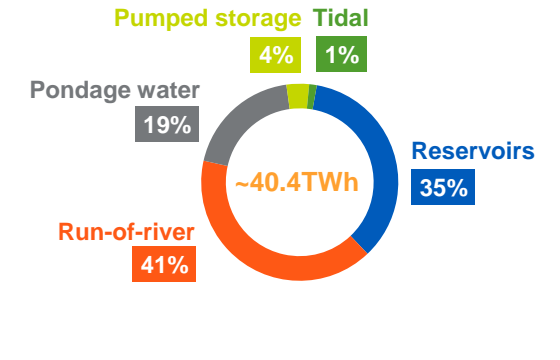
in GW



c. 23% of the EDF's fleet installed capacity in **mainland France**

AVERAGE PRODUCTIBLE

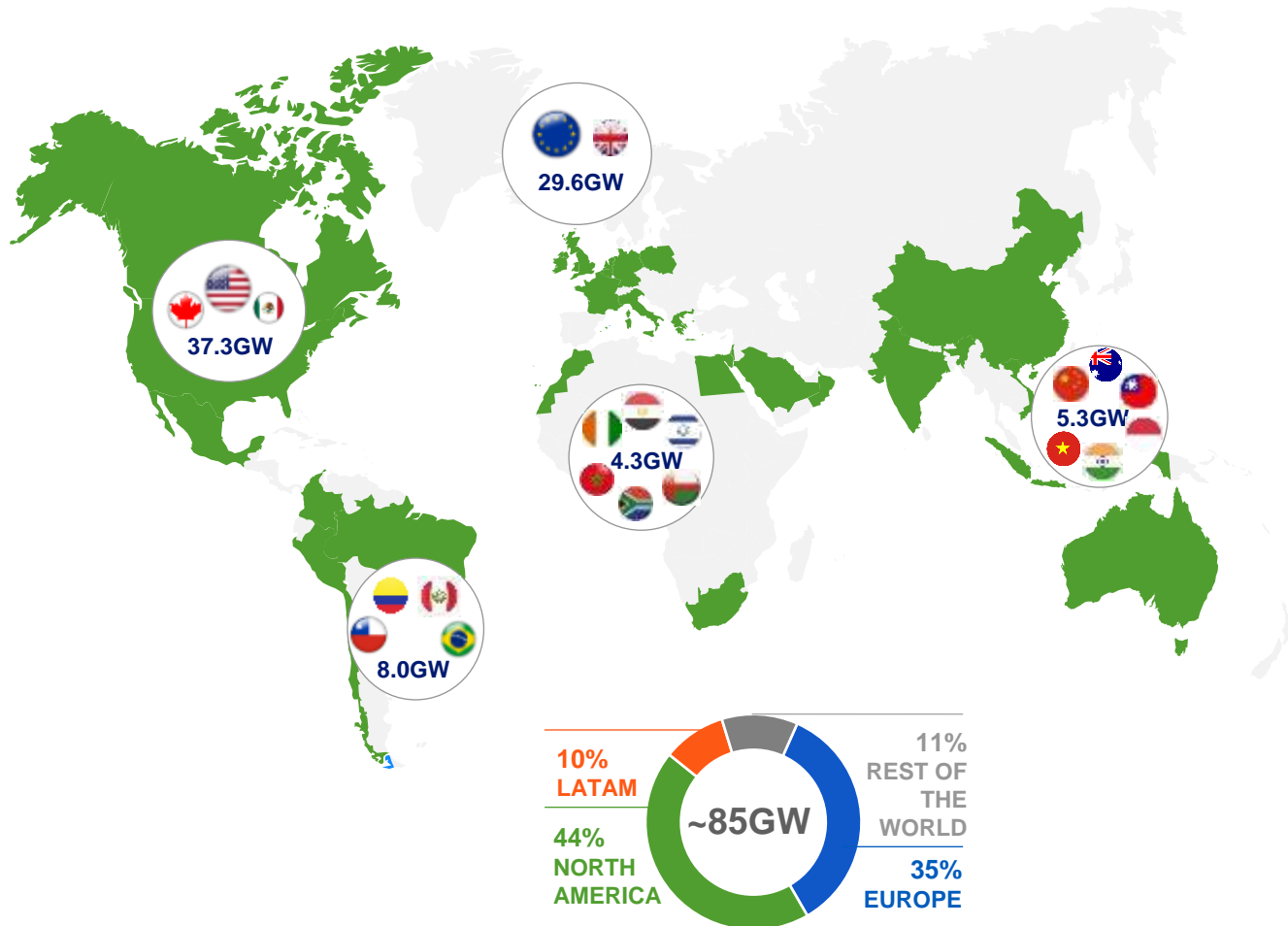
in 60 years⁽¹⁾



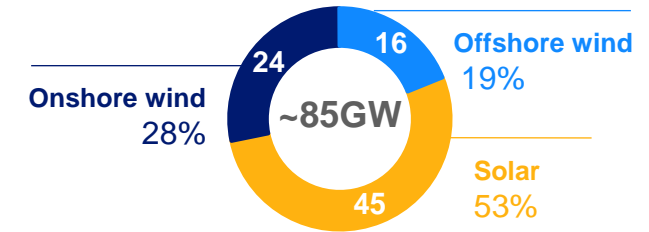
c. 11.5% of the average EDF output in **mainland France**

A PORTFOLIO OF WIND AND SOLAR PROJECTS OF ~85GW⁽¹⁾

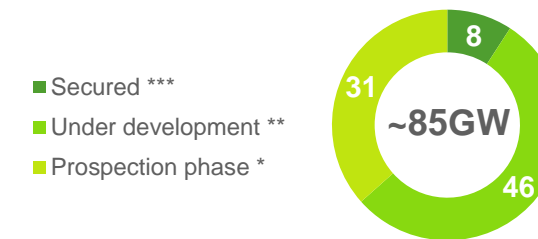
A PROJECT PORTFOLIO THAT IS **DIVERSIFIED GEOGRAPHICALLY...**



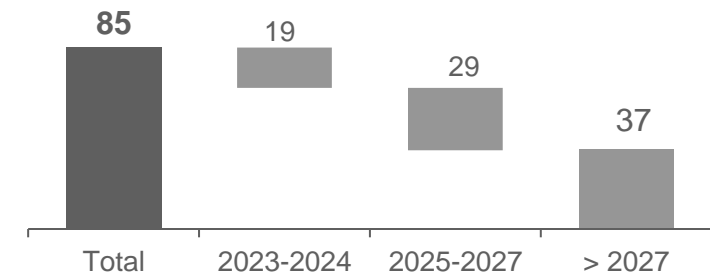
... AND **BALANCED BETWEEN WIND AND SOLAR**



BREAKDOWN BY DEVELOPMENT PHASE⁽²⁾



BREAKDOWN BY DATE OF START OF CONSTRUCTION (IN GW)⁽³⁾



NB: situation at 31/12/2022.

(1) Mainly Wind and Solar. Pipeline excluding capacities under construction. Gross data corresponding to 100% of the capacity of the projects concerned.

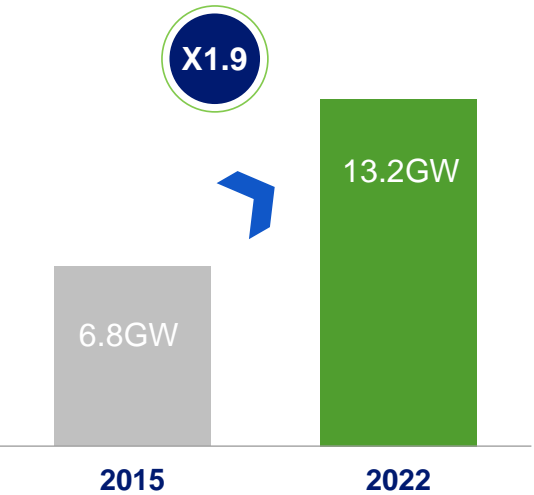
(2) All the projects in prospection phase included in the pipeline, starting 2020.

(3) Start of construction portfolio, not probability-based.

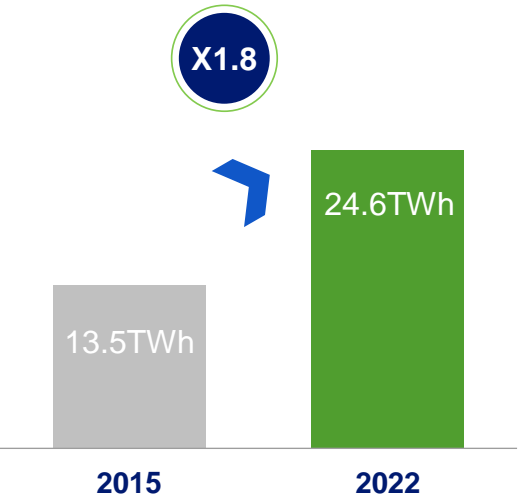
STRONG GROWTH BASED ON A LARGE PROJECT PORTFOLIO

Net installed capacity⁽¹⁾ x1.9 since 2015

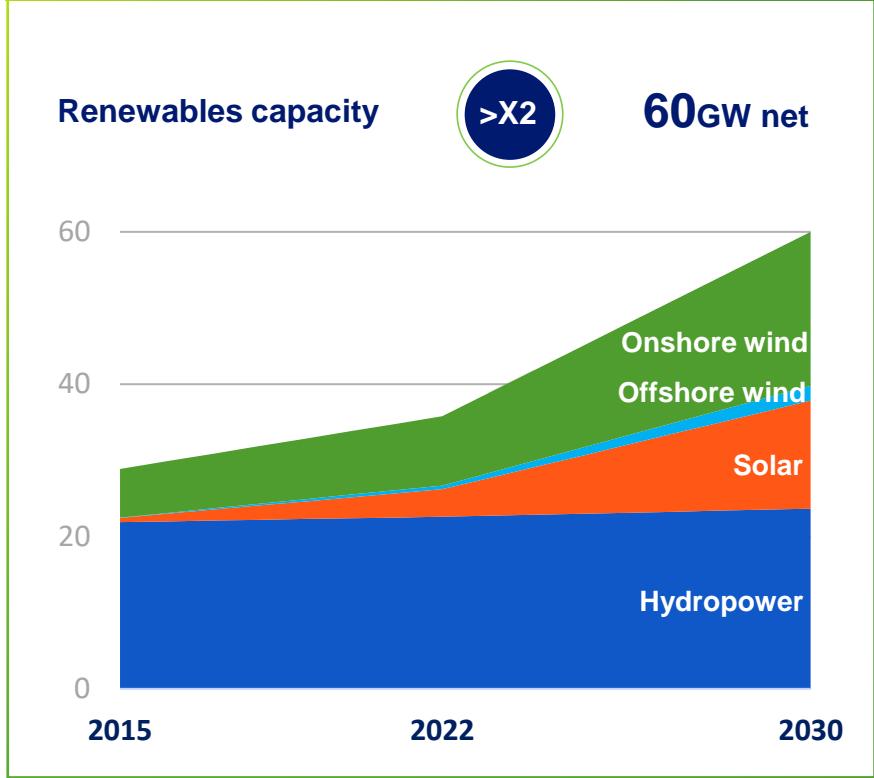
In net GW



Significant increase in total output⁽¹⁾



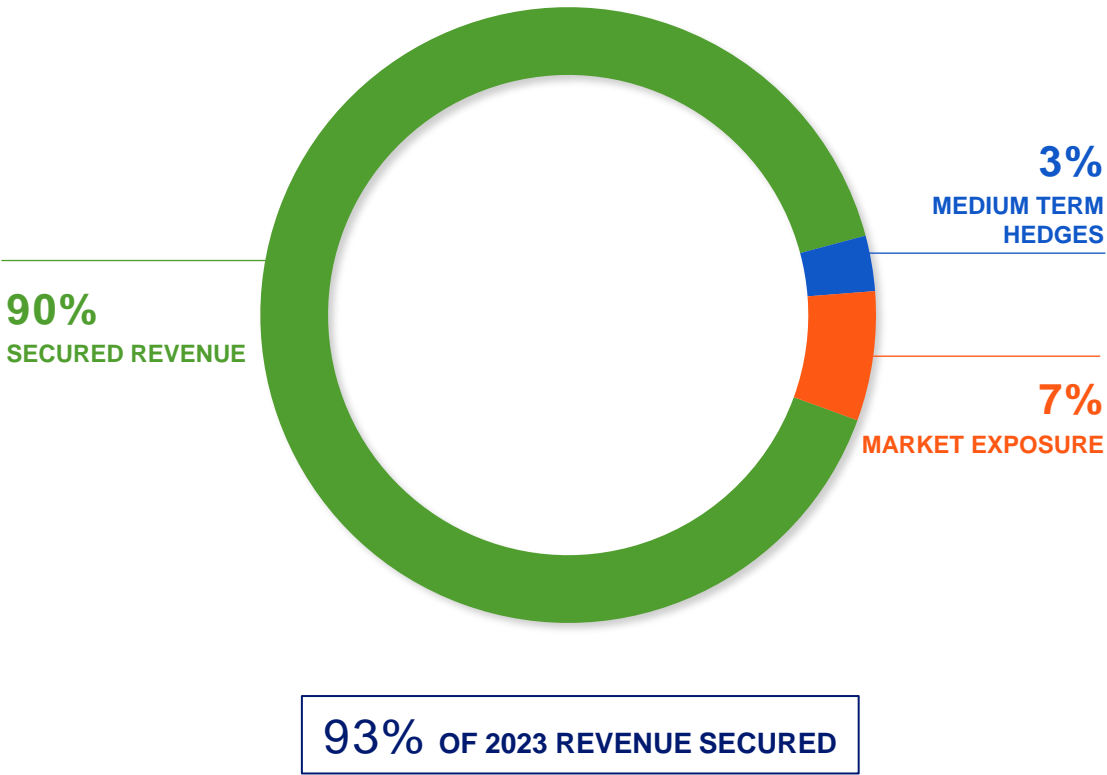
2030 Ambitions (including hydro)



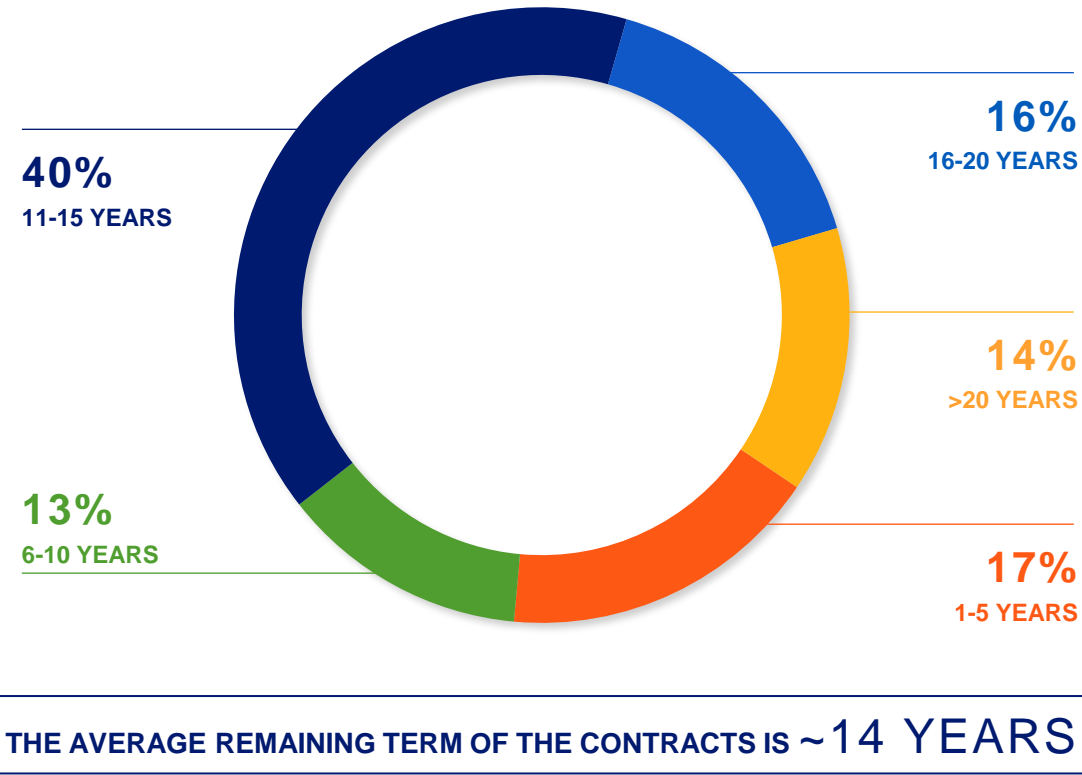
(1) Solar and wind.

REVENUE SECURED BY LONG-TERM CONTRACTS

CONTRACTUALISATION OF 2023 CONSOLIDATED REVENUE FROM RENEWABLE GENERATION⁽¹⁾



AVERAGE RESIDUAL DURATION OF LONG TERM CONTRACTS⁽²⁾



(1) Based on the estimate of 2023 revenues from fully consolidated assets
(2) Weighting according to estimated 2022 revenues of fully consolidated assets

OFFSHORE WIND IN FRANCE: 5 PROJECTS & 1 IN OPERATION FOR A TOTAL CAPACITY OF >3GW

IN OPERATION

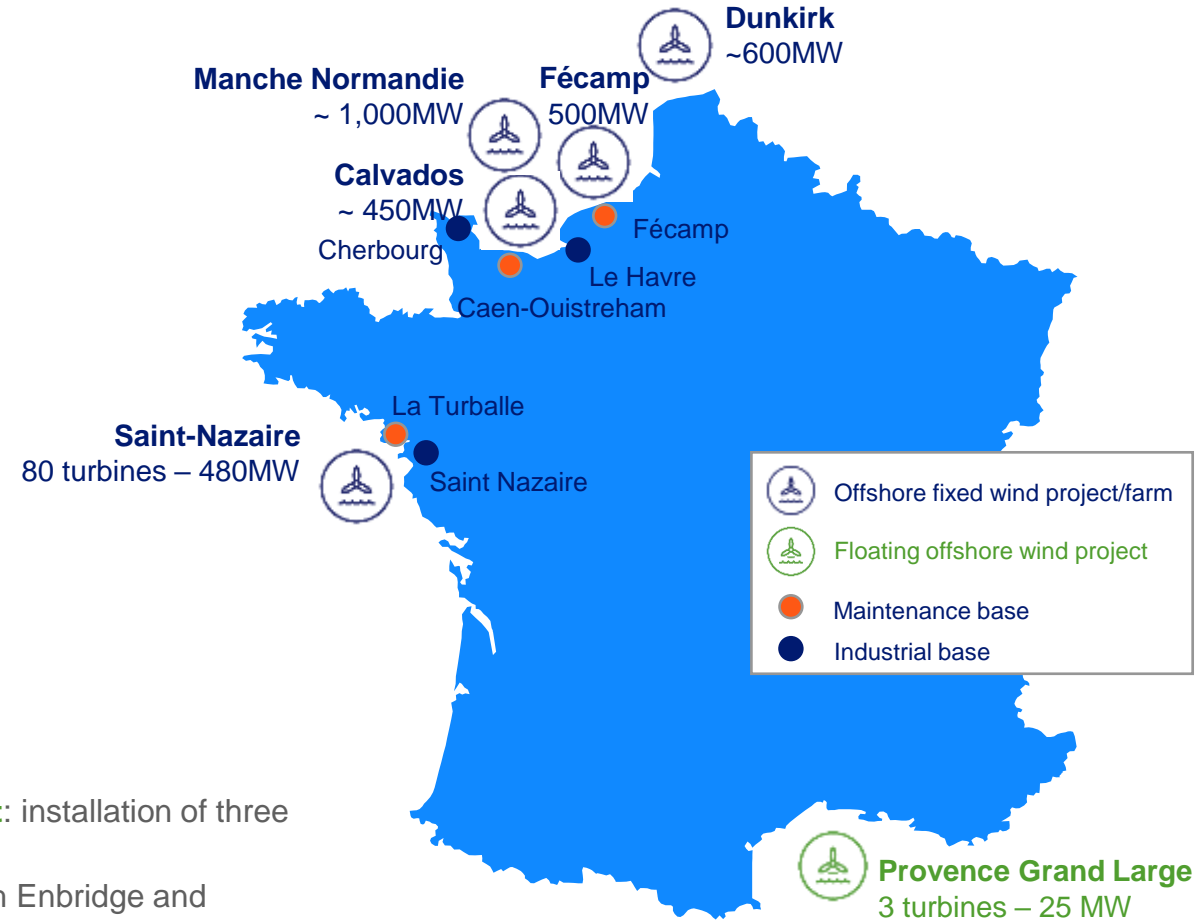
- **Saint Nazaire** (commissioned in November 2022, ~€2bn total investments, partnership with EIH SARL)

ONGOING CONSTRUCTIONS

- **Fécamp** (started in 2020, expected commissioning in 2023, ~€2bn total investments, partnership with EIH SARL)
- **Calvados** (Courseulles-sur-Mer) (Start in February 2021, expected commissioning in 2025, ~€2bn total investment, partnership with EIH SARL and Skyborn)

FURTHER DEVELOPMENTS

- Development of **Dunkirk** (~€1bn total investment, partnership with Enbridge)
- Gain of the tender in Normandy for the **Manche Normandie** in partnership with Mapple Power
- **Construction of Provence Grand Large, a floating wind pilot project:** installation of three 8MW turbines on floating foundations
- **Participation in tenders** in South Brittany and Mediterranean coast with Enbridge and Canada Pension Plan Investment Board (CPPIB)

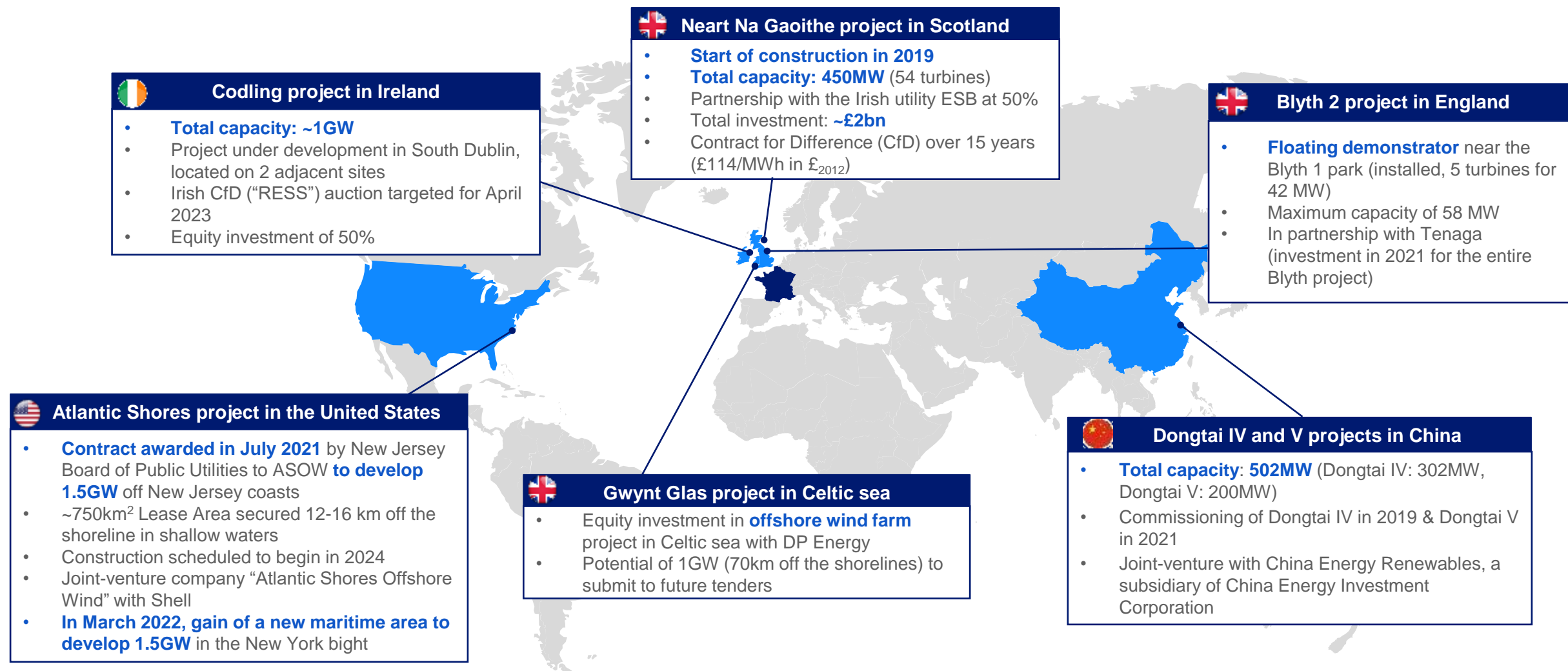


Offshore fixed wind project/farm



Floating offshore wind project

INTERNATIONAL OFFSHORE WIND DEVELOPMENTS: NEARLY 4GW IN DEVELOPMENT



A SUSTAINABLE BUSINESS MODEL BASED ON KEY COMPETITIVE ADVANTAGES



VALUE CREATION:

+150-200 bps

DIFFERENCE BETWEEN THE EXPECTED RETURN RATE AND WACC⁽²⁾

(1) EDF Renewables Development, Engineering and Construction internal teams. Excluding contractors and partners capabilities.

(2) Difference above WACC. Historical average performance estimated as part of a profitability analysis of EDF Renewables projects (scope: 78.3GW net, 137 farms, 14 countries). The IRR calculation takes into consideration the various assumptions (including market prices evolutions).

TECHNOLOGICAL INNOVATION: A KEY COMPETITIVE ADVANTAGE

PHOTOVOLTAIC SOLAR

- **Increase the capacity of installations thanks to bifacial PV modules**
- **Unlock new potentials in solar PV in geographically constrained areas thanks to floating photovoltaic solar installations ...**
 - Ongoing construction of a floating photovoltaic power plant of 20MW in France (**Lazer**, Hautes-Alpes, expected commissioning in 2023)
- **... and Agri-PV**
 - 1st co-developed pilot project with INRA, in operation at EDF R&D center « les Renardières »
 - 45% stake taken in Green Lighthouse Development (GLHD), a pioneer in agri-PV in France with a pipeline of 2.5GW

OFFSHORE WIND

- **Exploiting new offshore potential with floating: Provence Grand Large** (France, a floating project of 3 x 8.4MW), and **Blyth II** (in the UK)

STORAGE

- **Development of flexibility on the grid using Li-ion batteries coupled to generation assets: Umoyilanga** project (South Africa - solar PV - wind) won in 2021, **Desert Quartzite** (USA - solar PV) won in 2021, and **Maverick 2** (USA) commissioned
- **Development of storage projects** (in the UK, **Pivot Power** commissioned 2 storage projects located in Kemsley and Oxford and currently builds a project located in Coventry) **and charging systems for electric vehicles** (via **PowerFlex** in the United States)
- **Microgrid projects** in remote areas: **c.100MW of PV & >100MWh of battery energy storage, in Peru** under development

~17.4GW OF O&M⁽¹⁾ : STRONG EXPERTISE, DIFFERENTIATING FACTOR



17.4GW of O&M contracts

Remote control and optimisation in real time via a control centre



10 countries



3 technologies
(onshore wind, offshore wind, solar PV)

OPTIMISED ASSET PERFORMANCE

- **Digitalisation and supervision in real time.**
Ongoing data lake creation for asset performance optimisation
- **Predictive maintenance** via algorithms dedicated to anticipate defaults, wear, damage

ENHANCED TECHNICAL EXPERTISE

- Continuous feedback on technical issues via O&M monitoring **strengthening knowledge and understanding of industrial technologies**
- A **strong credibility** vis-à-vis turbine manufacturers and third-party investors

REINFORCED COMPETITIVENESS DURING THE DEVELOPMENT PHASES

- **More competitive price positioning on tenders**
- **Contract optimisation** thanks to the competition between turbine suppliers for initial or renewal O&M contracts
- **Early stage project optimisation** (development, construction, etc.)

(1) GW generated by renewable energy power plants that EDF operates and maintains (plant supervision, monitoring of production, preventive and corrective maintenance, etc.) on its own behalf or for a third party

EDF GROUP MAIN BUSINESSES



➤ NUCLEAR	P. 40
➤ RENEWABLES	P. 55
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➤ GAS	P. 95

ADJUSTMENT OF THERMAL POWER TO EDF'S LOW CARBON STRATEGY

Thermal strategy: preparation for the end of coal-fired power generation, transition to a decarbonised mix in the NIZ⁽¹⁾ and modernisation of EDF's fleet

- **Phase out of coal-fired power generation by 2030, worldwide:**
 - **In France: end of generation of Le Havre** in April 2021. Need (expressed by RTE) for **Cordemais** (last coal plant in France operated by the Group), to maintain generation until 2024, or 2026, so as to maintain balance between demand and supply
 - **In the United Kingdom: end of generation of West Burton A** on 31 March 2023
 - **in China:** withdrawing from coal-fired electricity production, in progress by the Group for its non-controlled assets (with the end of the Shiheng I & II joint ventures with Shandong on 1 January 2022)
- **Achieve low-carbon electrical production in the NIZ⁽¹⁾:** replacement of fuel oil with biomass, shutdown of the oldest combustion turbines (TAC) and generators, energy management system on fossil fuel-fired sites, development of 100% renewable energy projects for isolated microgrids
- **Modernise the fleet to improve its technical and environmental performance:** in Italy, construction of Marghera and Presenzano CCGT plants (with CO₂ emissions 40% lower than the national average and 70% fewer NOx emissions)

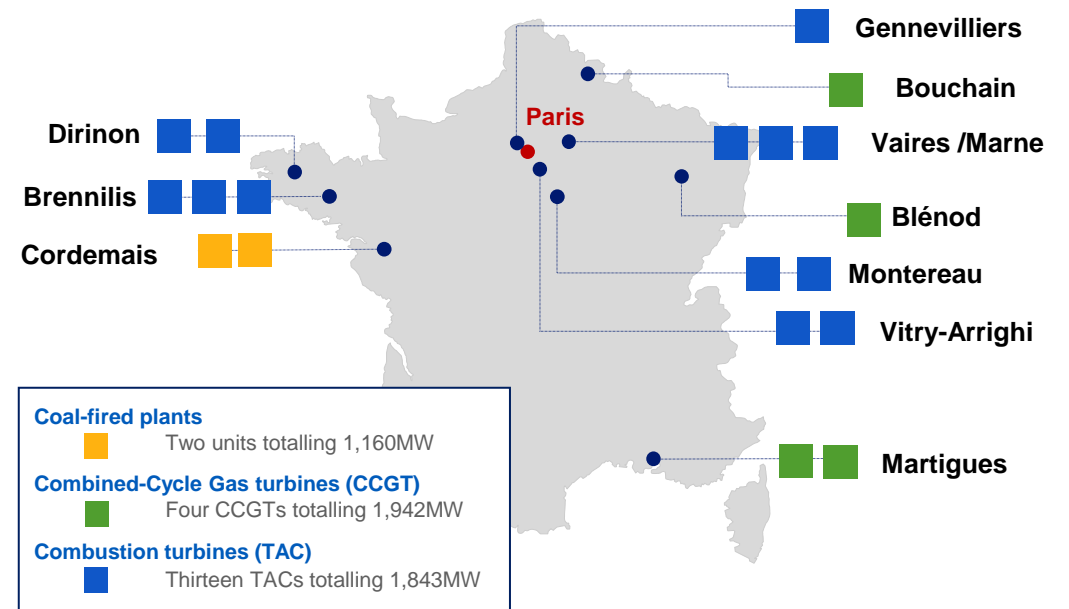
Share of thermal in the energy mix of the Group:

- **Installed capacity⁽²⁾** as of 31/12/2022: **Gas 9%, Coal 2% Fuel Oil 3%**
- **Electricity generation⁽²⁾** in 2022: **Gas 9%, Coal 0.4% Fuel Oil 1%**
- It varies from one country to another: in 2022 it reached ~3% of electricity generation in France and ~80% in Italy

(1) Non-Interconnected Zones.

(2) Consolidated data.

In mainland France 10 generation sites ~5GW



In the world ~12GW net⁽³⁾ o/w main generation sites as of today

- **Belgium:** Ringvaart (257MW)
- **Brazil:** Norte Fluminense (827MW)
- **Chile:** Nueva Renca (185MW)
- **China:** Fuzhou (980MW), Sanmenxia (441MW), Shandong (353MW)
- **Greece:** Tessaloniki 1 (207MW), Thisvi (199MW)
- **Italy:** 4,2 GW o/w Torviscosa (807MW), Simeri Crichi (805MW), Altomonte (753MW), Marghera (572MW)
- **Overseas France:** 1.6GW o/w Port Est (211MW), Pointe de Jarry (211MW), Bellefontaine (211MW)
- **Vietnam:** Phu My 2-2 (402MW)

(3) Data based on EDF's participation in Group companies, incl. investments in affiliates and joint ventures excl. end of generation of West Burton A Units 1 & 2 (1GW) on 31 March 2023 and of Sloe (870MW) in January 2023.

EDF GROUP MAIN BUSINESSES



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ENEDIS⁽¹⁾: DISTRIBUTION NETWORK LEADER IN EUROPE

MAJOR
DISTRIBUTION
NETWORK
PLAYER IN
EUROPE

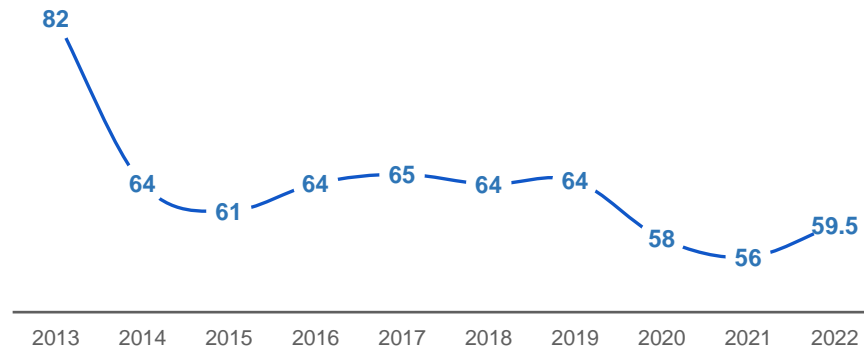
WORLD'S
SMARTEST
DISTRIBUTION
NETWORK
OPERATOR⁽³⁾

TOP-TIER
OPERATIONAL
PERFORMANCE



Top-tier operational performance

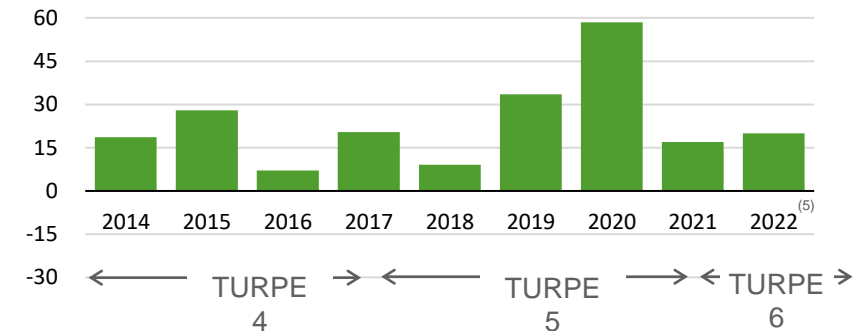
Outage time⁽⁴⁾



Less than 60 minutes for 3 years

Regulatory incentive bonus systematically obtained since 2014

Regulatory incentive (in €m)



For TURPE 6, bonus/malus between -€269M and +€201M: this modifies the remuneration potential in relation with performance level

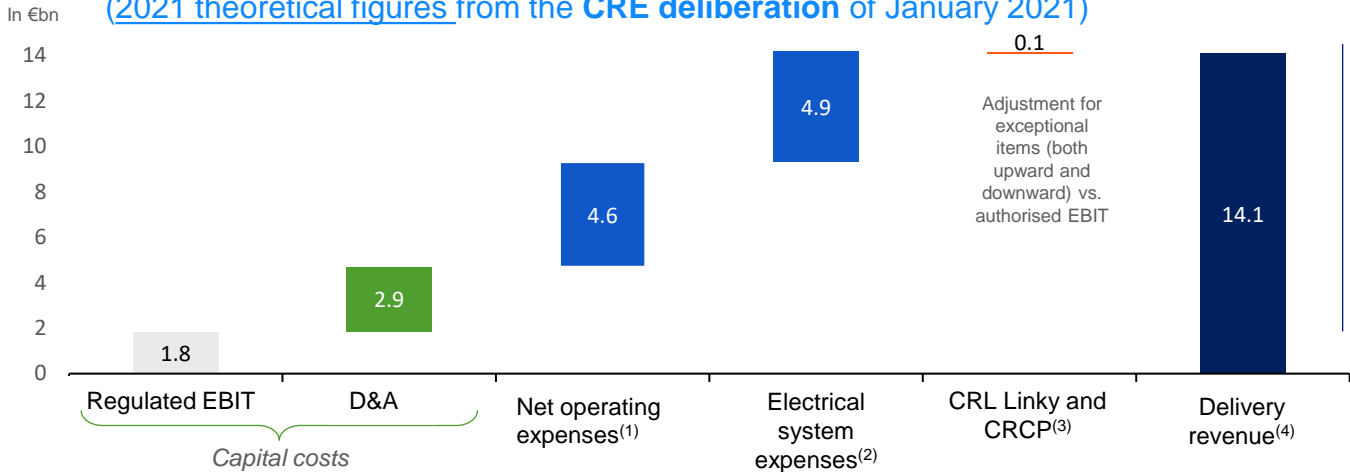
- (1) Enedis is an independent EDF subsidiary as defined in the French Energy Code
 (2) Corresponds to the number of delivery points.
 (3) For the second consecutive year, and by the Singapore Power Group Smart Grid Index (SGI).

- (4) Excluding exceptional events and transport grid incidents.
 (5) Provisional data.

ENEDIS: TURPE 6, A MATURE REGULATORY FRAMEWORK



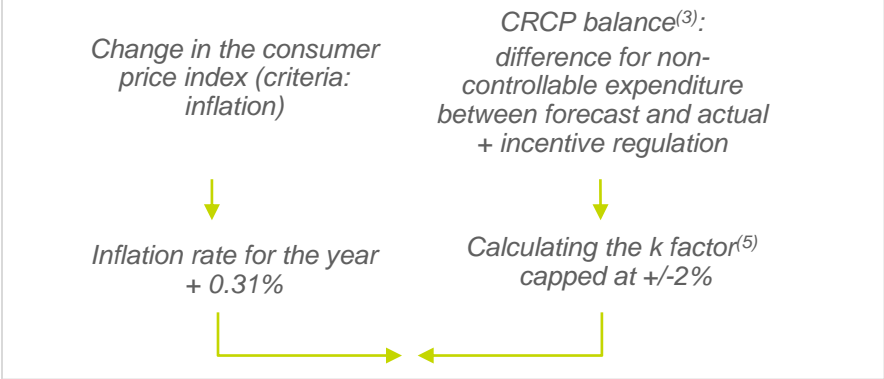
Key elements of the remuneration: a cost + remuneration approach (2021 theoretical figures from the CRE deliberation of January 2021)



No exposure to variations in distributed volumes (number of customers, TWh distributed including weather impact) vs trajectory defined by the regulator

Incentive regulation: productivity gains, quality of service and continuity of supply, R&D and smart grids

Tariff indexation principle (TURPE 6)



Income and expense⁽⁶⁾ largely secured by the mechanism of the Income and Expense Adjustment Account (CRCP):

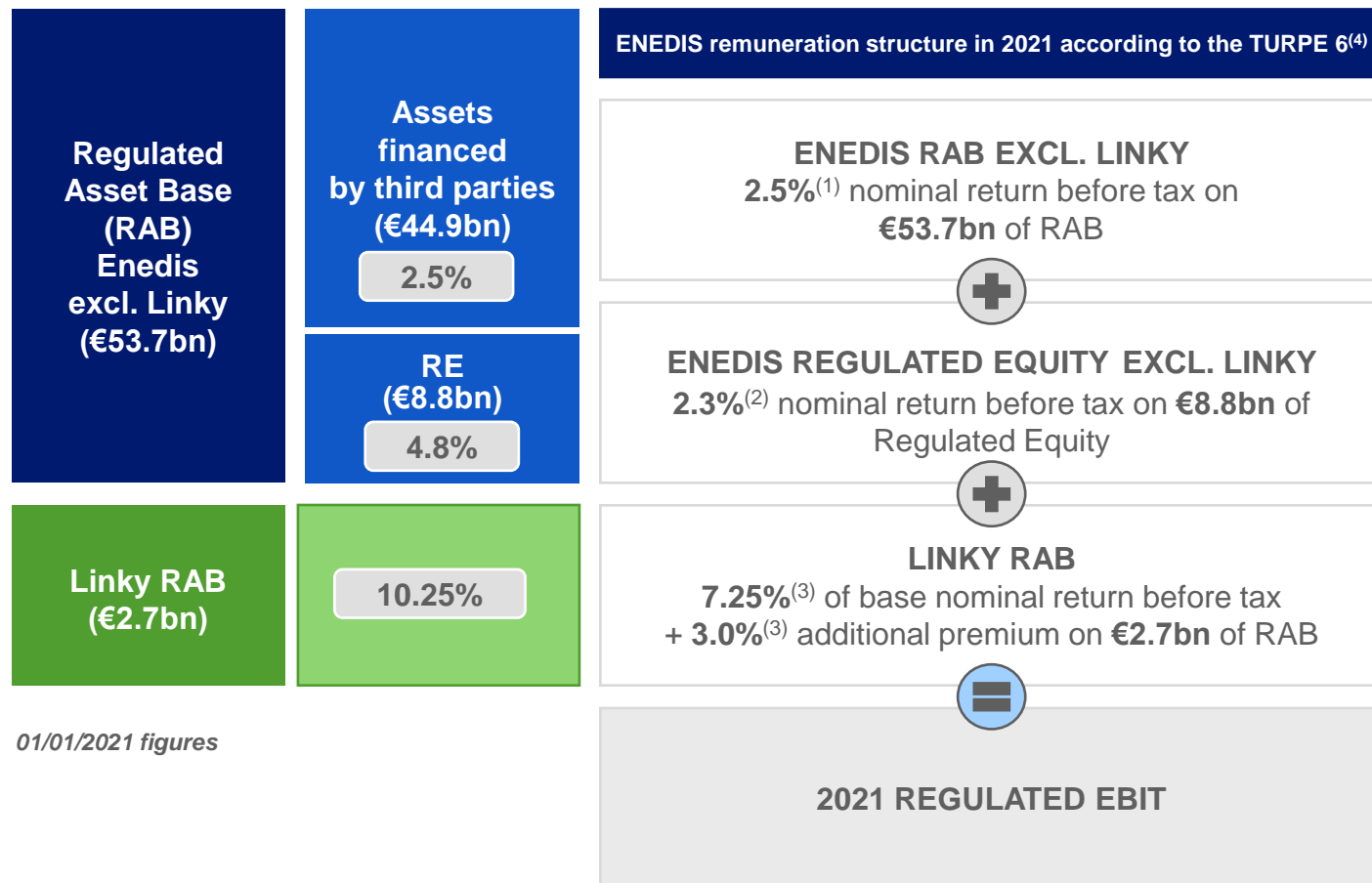


(1) Net revenue excluding transport
 (2) Power system charges = transport purchase from RTE + purchase of network losses
 (3) CRCP = expense and income adjustment account; CRL Linky = Linky regulated levelling account (Compte Régulé de Lissage [CRL])

(4) French standard data. The difference with IFRS mainly corresponds to Enedis' contribution to the Electricity Equalization Fund
 (5) k factor = percentage change in the fee table resulting from the clearance of the CRCP balance
 (6) Capital charges + operating charges + electric system charges

TURPE 6 REMUNERATION STRUCTURE: A FAVOURABLE RISK PROFILE

A remuneration mechanism based on a guaranteed return



01/01/2021 figures

TURPE 6 (in force since 1 August 2021) in continuity with the previous TURPE

- **Return on capital depends little on interest rate trends: stable at 2.5%** since TURPE 4
- Return on **Regulated Equity**: decrease from **4 to 2.3%** to take into account the reduction of the risk-free rate and the corporate tax rate in France
- **CRCP: mechanism globally validated.** The entry CRCP of TURPE 6 (regarding TURPE 5) represents a receivable of €588m⁽⁵⁾ to be spread over the 4 years of TURPE 6
- **Incentive regulation: targets raised**, notably quality of service
- Main new features: **annual tariff indexation** includes **0.31%** remuneration above inflation.

(1) Asset margin = Asset beta x Market risk premium / (1 - tax rate) = 0.36 x 5% / (1 - 26.47%) = 2.5%.

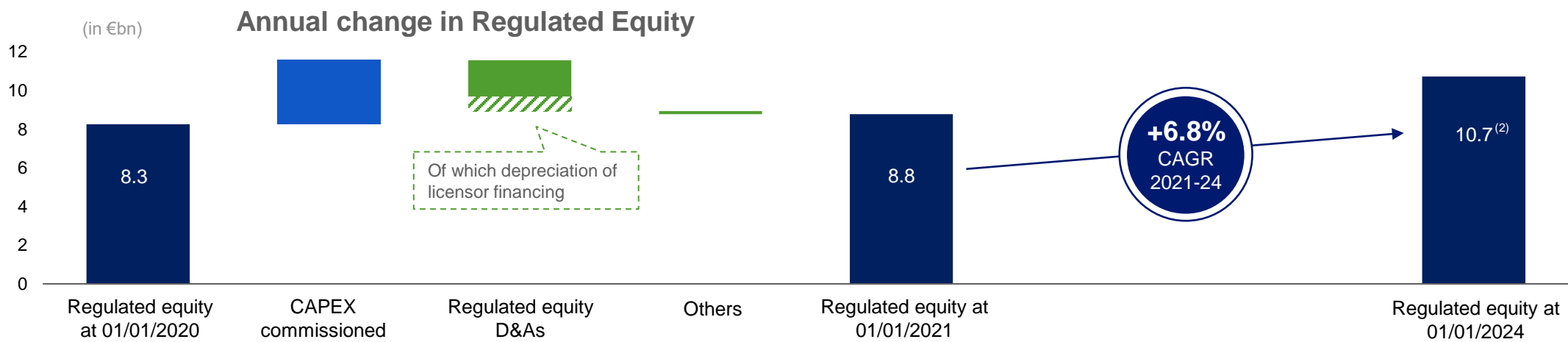
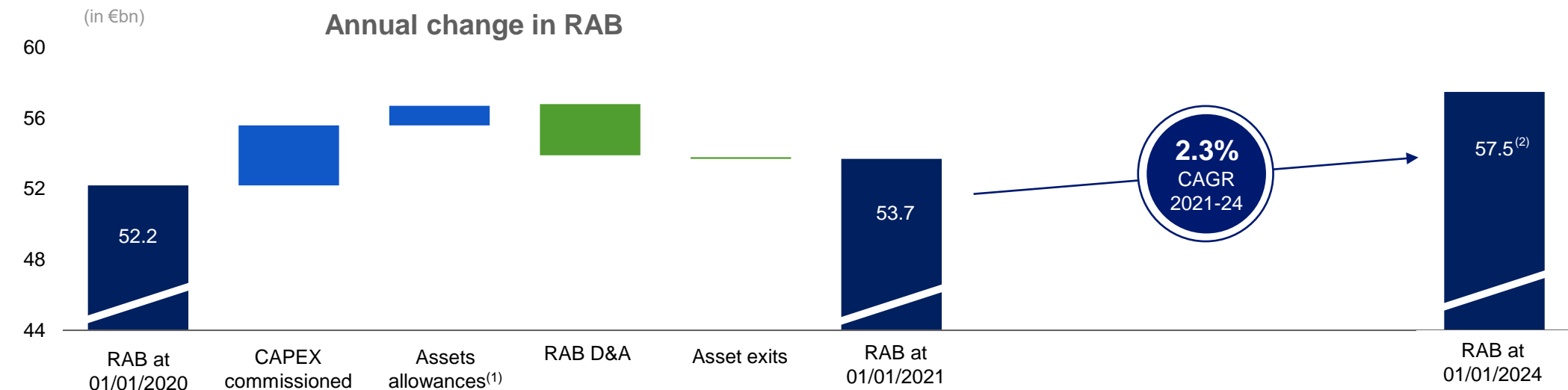
(2) Additional rate of remuneration applied to RE = Risk-free rate / (1 - Tax rate) = 1.7% / (1 - 26.47%) = 2.3%.

(3) Remuneration rate for Linky assets = Base rate + 3.0%⁽³⁾ additional premium = 7.25% + 3% = 10.25%.

(4) Applicable from 1 August 2021.

(5) CRE deliberation.

STEADY GROWTH IN RAB AND REGULATED EQUITY



(1) Work by concession-granting authorities and transferred to Enedis + c.€0.4bn for the integration of growing columns excluding concession in 2020 (ELAN law).

(2) Estimated figures from the CRE deliberation Provisional data.

LINKY⁽¹⁾: AN INCENTIVISING TARIFF FRAMEWORK

LINKY: THE
ROLLOUT
PROGRAM FOR
NEW SMART
METERS

34m⁽²⁾
smart meters
installed
at end-2021

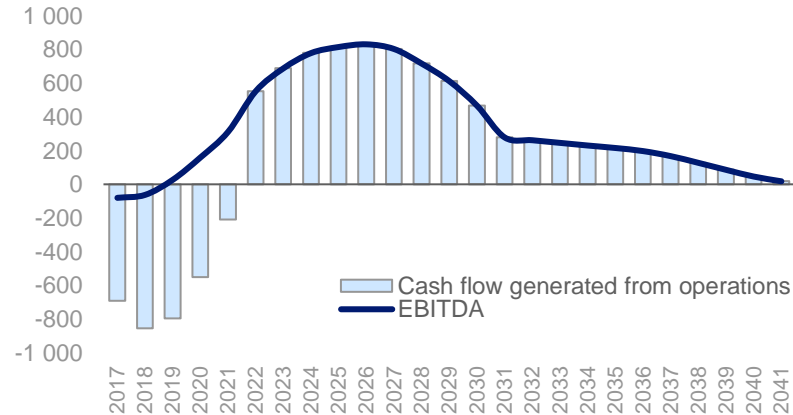
Significant
contribution
to cash-flow
from 2022



~€3.9bn⁽²⁾
investments
over 2014-2021

Specific
regulation
over
20 years
(Linky-
dedicated
RAB)

EBITDA⁽³⁾ and cash flow generated from
Linky operations (€m)



Linky – Remuneration

7.25%
Nominal rate of return on assets
before tax

+
3%
Additional premium⁽⁴⁾ → Secured

(1) Linky is a project led by Enedis, an independent EDF subsidiary as defined in the French Energy Code.

(2) Program costs are lower than the initial budget, planned at €4.7bn. Program finalised in 2021.

(3) At current accounting standards.

(4) Additional premium of 3% / Penalties of -2 %, depending on the respect of costs, deadlines and performance of the system during the deployment phase.

FRENCH ISLAND ACTIVITIES & ELECTRICITÉ DE STRASBOURG

French island activities⁽¹⁾

- **Integrated business model** including **generation**, **electricity purchases**, **distribution** (via concessions) and **supply** at the regulated tariff
- **Network activities: similar remuneration to Enedis** and €240m investments in 2022
- **Generation activities:**
 - **Capacity 2.0GW⁽²⁾** (fuel 78%, hydropower and other EnR 22%)
 - **Electricity generation 6.4TWh⁽²⁾** (fuel 75%, hydropower and other EnR 25%)
 - **1.2m** of customers (electricity)
 - Replacement of the main power plants ending their useful lives, building new plants and converting its existing plants to use liquid biomass as Port Est in the second half of 2023, 100% renewable plant
 - For assets commissioned before 06/04/2020, remuneration of 11%. For assets commissioned after 06/04/2020, between 6.25% and 9.75%
- **the Island Energy Systems (IES)** Department, responsible for the supply and demand balance on a daily basis. It manages all the networks
- **the subsidiary EDF Production Électrique Insulaire (EDF PEI)**, responsible for building and operating generation assets.



Electricité de Strasbourg

STRASBOURG
ELECTRICITÉ
RESEAUX

- **The ÉS group** is a French Alsatian region energy producer, committed to the long-term energy and economic performance of the area through its **four business lines:**
 - **Electricity distribution** (15,000km electric network)
 - **Energy supply** to c.600,000 customers
 - **Energy services**
 - **Renewable energy generation**
 - **Deep geothermal:** 178GWh fossil-fired & 6GWh electric
 - **Biomass:** 106GWh fossil-fired & 66GWh cogeneration
 - **Hydropower:** 46GWh
- Usually around 70% of EBITDA from regulated distribution activities
- ~1,300 employees
- 2021 - 2026 : roll out of Linky

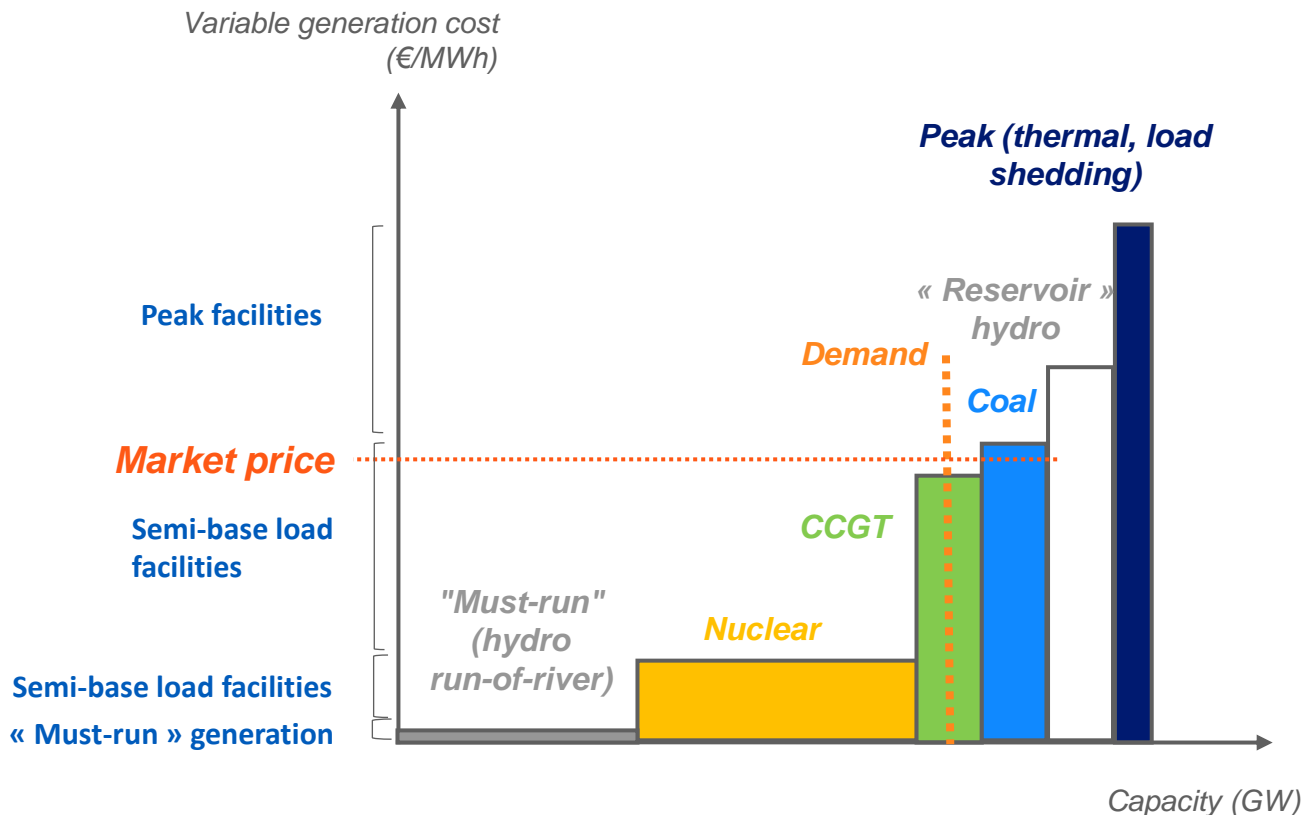
(1) French island electrical activities include Corsica, Martinique, Guadeloupe, French Guiana, Reunion, Saint Pierre and Miquelon, Saint Barthélemy, Saint Martin and Ponant islands.

(2) Fully consolidated data as of 31/12/2022

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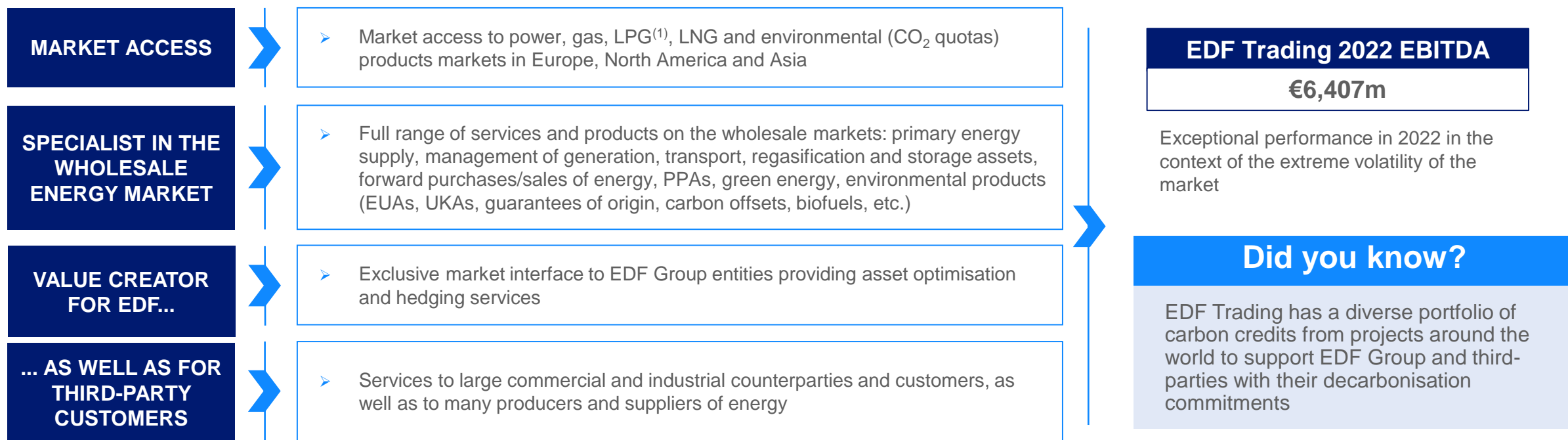
DAILY OPTIMISATION: THE MERIT ORDER



(1) Variable costs: operating costs proportional to the generated energy, fuel costs, CO₂, costs of injection into the grid.

- **For each moment**, the optimiser schedules the operation of available means of generation, mobilising them according to the merit order of variable costs⁽¹⁾ until the estimated **demand** is met
- Before buying volumes on the spot market, each producer determines the resources required to meet the demand. It classifies them from the least expensive to the most expensive
- It then determines the marginal cost, which is the variable cost of the most expensive means of generation called to meet the supply/demand balance of its portfolio
- Given this marginal cost, it determines the sales and purchases volumes on the spot market
- **Spot market price** (day ahead) is based on the marginal cost that forms the intersection of the supply of all producers with the overall demand to meet
- The relative positioning of gas and coal plants depends on fossil fuel prices and CO₂ quotas. Over 2022, in the context of the Ukrainian war, coal was more competitive than gas

EDF TRADING, ACCESS PLATFORM TO WHOLESALE ENERGY MARKETS



Well positioned with a broad geographical presence



(1) Liquid Petroleum Gas.

PURCHASE OBLIGATION AND SALE ON WHOLESALE MARKET

Public service mission: EDF⁽¹⁾ must buy electricity generated by certain technologies (or pay the facilities an "additional remuneration" (AR)) whose development is promoted by the French State, at prices set by the government (by decree or through tenders)

Pursuant to Article L. 121-7 of the French Energy Code, EDF is compensated for the additional costs resulting from the purchase obligations (PO) on the basis of a reference to prices from wholesale electricity markets, known as "avoided cost" (compensation)

➤ EDF-Purchase obligations:

According to the CRE ruling of 16 December 2014, the energy of purchase obligations is resold on the markets:

- the near certain component (i.e. predictable over the medium term) directly by tenders under transparent and non-discriminatory conditions
- the variable component (i.e. predictable for the day ahead) on EPEX Spot via EDF Trading (in the dedicated book)

Since the capacity mechanism has been set up, EDF has in charge the certification of the facilities under the purchase contract and resells these capacities at the auctions (nearly 6GW)

➤ EDF-Additional Remuneration:

In 2022, market prices were above the "AR" contract price reference. Thus, producers paid EDF the difference between these two prices and EDF refunded the French state for this difference

(1) And the LDCs (Local distribution company).

(2) Excluding Corsica and French overseas departments.



488,000

Managed contracts
Annual growth in 2022:
+40,000 contracts



~€52m

of management
fees paid by the
French State to
EDF for 2021

2022
Key
figures⁽²⁾

PO
50.9 TWh

of purchased electricity

for 8.7bn
of purchases

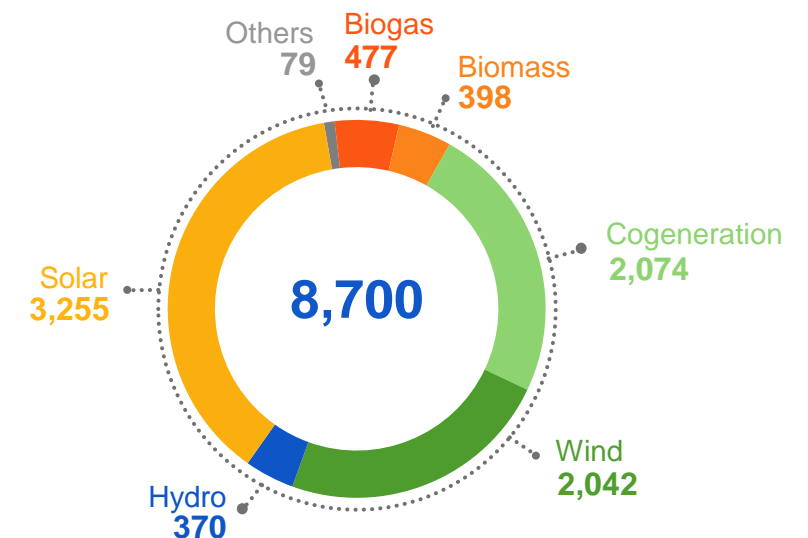
AR

3.5 TWh

of sustained electricity

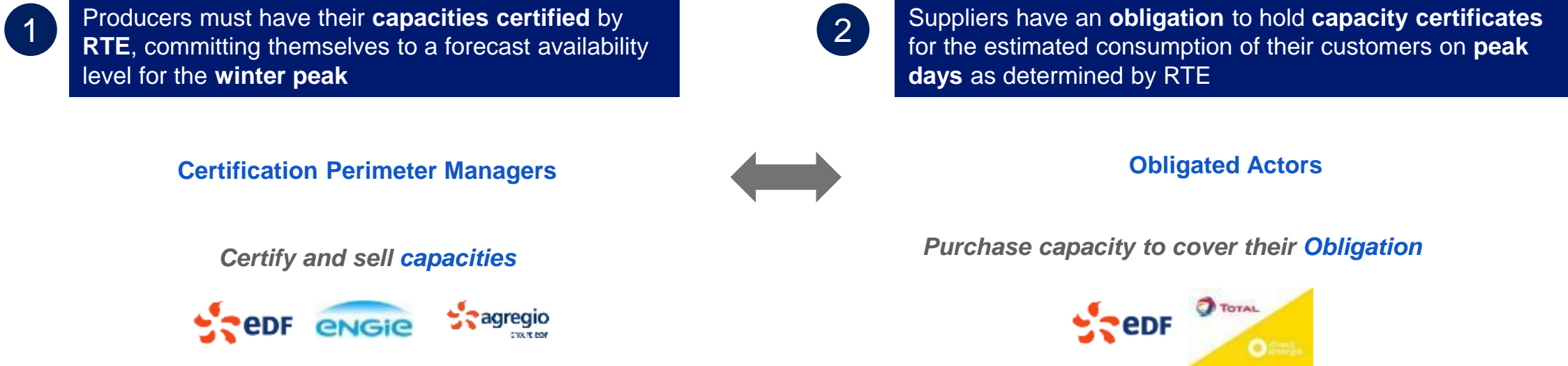
€459m
of payment by producers

Purchasing breakdown by sector in 2022 (in €m)



CAPACITY MECHANISM IN FRANCE: PRINCIPLES

TARGET: REMUNERATE THE CONTRIBUTION OF GENERATION MEANS TO THE SECURITY OF ELECTRICITY SUPPLY IN FRANCE, IN ORDER TO SUPPORT DECISIONS TO INVEST OR SHUTDOWN OF THESE MEANS



The capacity mechanism was set up in 2016 in France

Its framework is currently under review for 2026

Other capacity mechanisms in the United Kingdom and Italy

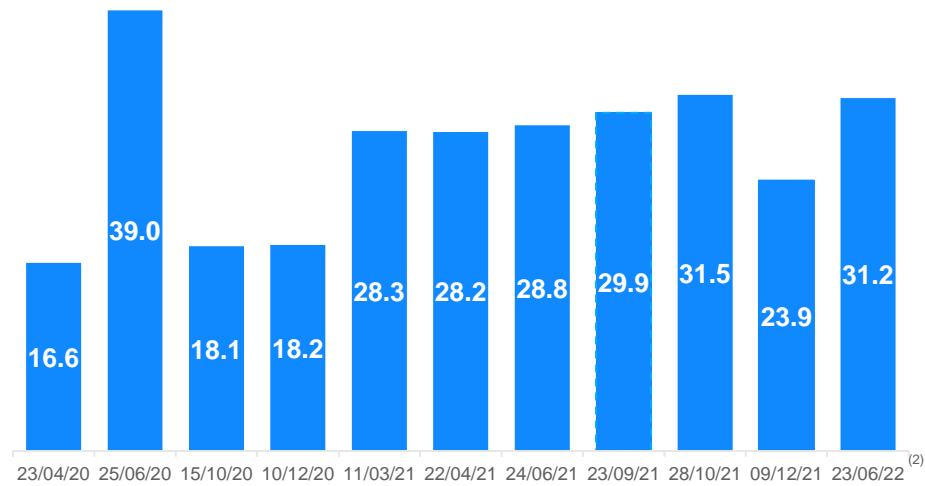
Auctions organised by EPEX allow supply and demand to be matched and a price to emerge

The price depends on the tightness of the supply-demand balance in each winter and the expected return on the assets to be available (the so-called "missing money")

CAPACITY MARKET IN FRANCE

FOR DELIVERY IN 2022

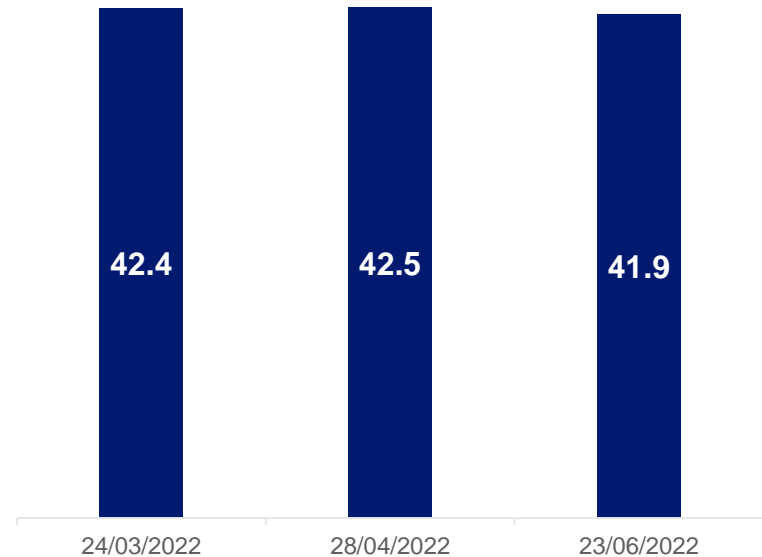
(in €/kW)



- Volume of certified EDF capacities: 64.2GW at end-June 2022
- Average price⁽²⁾ : €26.2/kW

FOR DELIVERY IN 2023

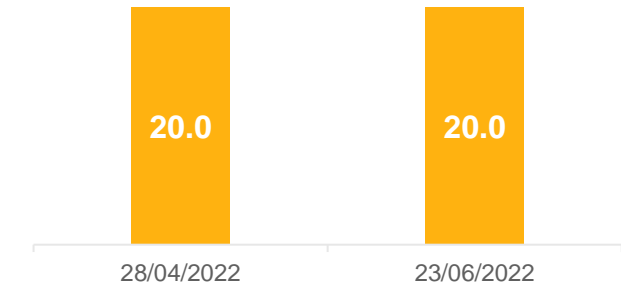
(in €/kW)



- Volume of certified EDF capacities: 62.4GW at end-June 2022
- Average price: €42.4/kW

FOR DELIVERY IN 2024

(in €/kW)



- Volume of certified EDF capacities: 67GW at end-June 2022
- Average price: €20.0/kW

(1) Data rounded to nearest tenth.
 (2) Does not take into account rebalance sessions.

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SUPPLY OF ELECTRICITY, GAS AND HEAT TO 40M CUSTOMERS AT END-2022

Electricity
33.9m customers

Gas
6.4m customers



United Kingdom: EDF Energy

3.8m electricity customers
2.3m gas customers

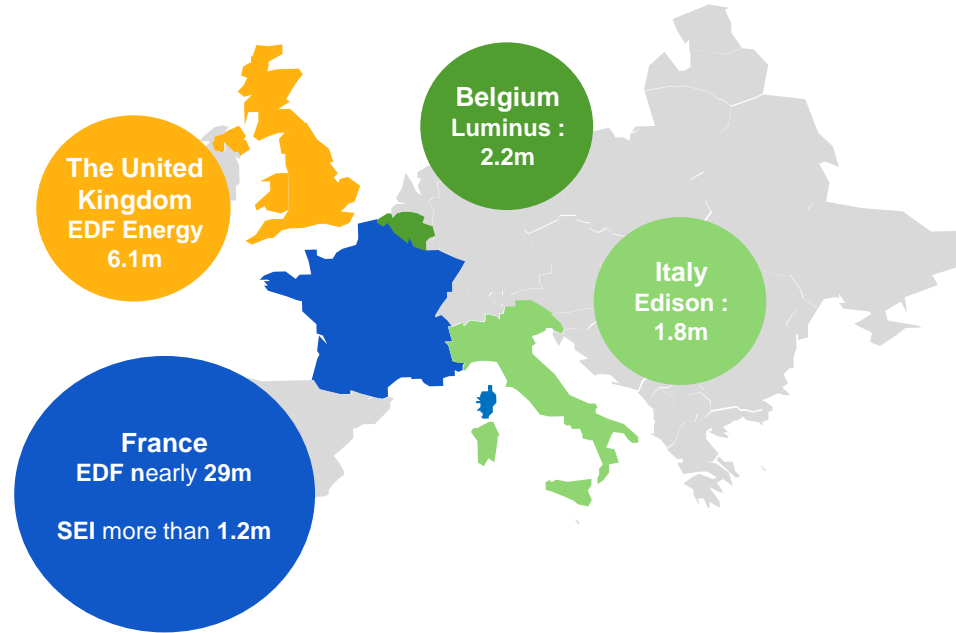
5.5m residential customers accounts
Highly competitive market with
~33 suppliers⁽¹⁾ 10.4% market share
on all its accounts

Electricity market

3.3m residential customers
11.2TWh electricity sold to
customers
0.5m business customers
2.1TWh sold to 216,000 SME
customers
30.3TWh sold to large industrial and
commercial customers

Gas market

29.2TWh gas sold to end
customers



France: EDF (incl. Electricité de Strasbourg)

More than **26.7m** electricity customers
More than **2.1m** gas customers

231.6TWh electricity sold to customers
40.5TWh gas sold to customer

France: SEI

More than **1.2m** electricity customers
9.9TWh electricity sold to customers

Belgium
Luminus :
2.2m



Belgium: Luminus

1.4m electricity customers
0.8m gas customers

The second largest player in the Belgian
energy market. ~22%⁽³⁾ market share
6.9TWh electricity generation
12.7TWh electricity sold
13.9TWh gas sold



Italy: Edison⁽²⁾

0.8m electricity customers
0.9m gas customers

14.6TWh electricity sold (end customers)
73.1TWh gas sold
6.6Bcm gas sold (residential and industrial uses)

France: Dalkia group (excluding speciality subsidiaries)

27.6TWh sold
24.0TWh for the heating and cooling
segment
3.6TWh for the electricity segment

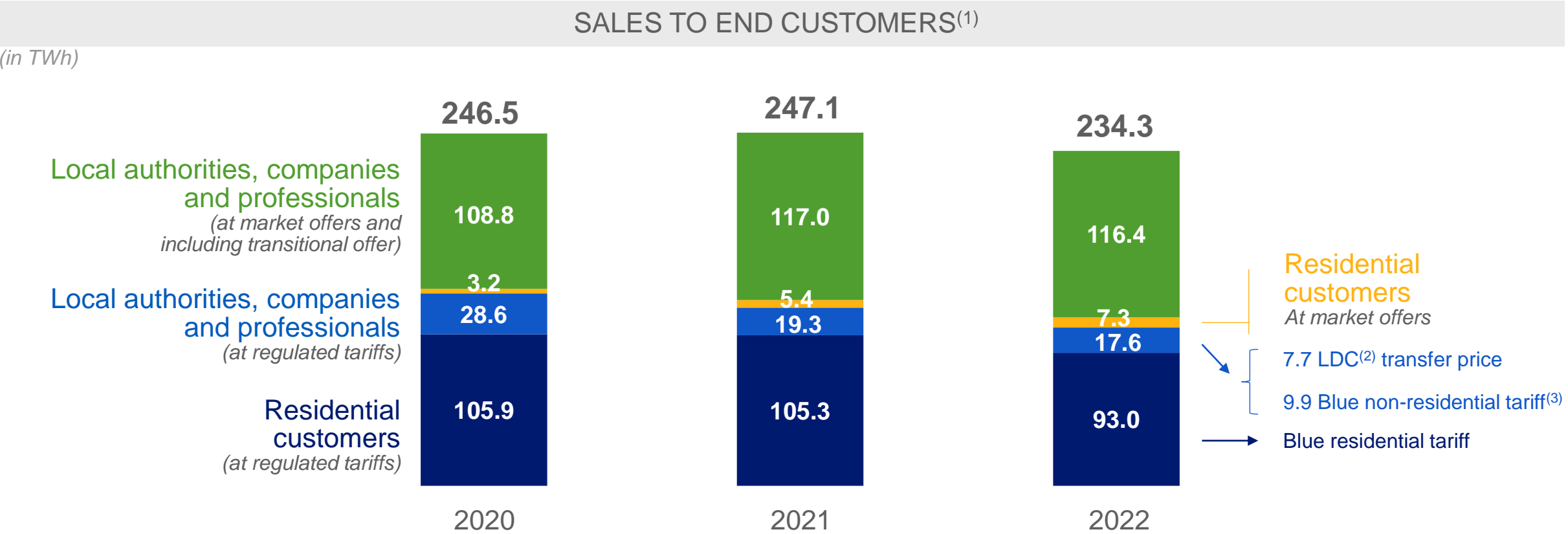
N.B. The values correspond to the first decimal or integer closest to the sum of the precise values, taking into account rounding.

(1) Cornwall Insight data at 31/10/2022.

(2) Includes customers of service activities.

(3) As of 31/12/2021 (latest figures).

ELECTRICITY SUPPLY IN FRANCE

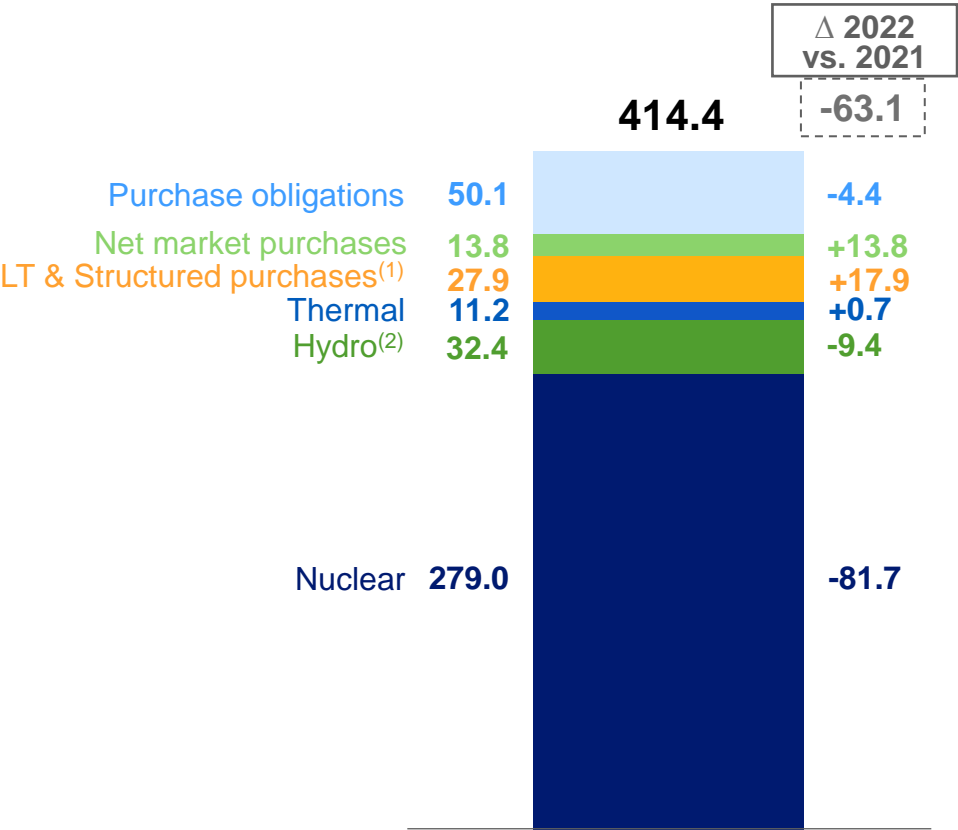


(1) Rounded to the nearest tenth. Including EDF's own consumption.
(2) Local Distribution Companies (LDCs).
(3) Of which Yellow and Green tariffs for 0.06TWh - Tariffs lower than 36 kVA.

FRANCE: UPSTREAM / DOWNSTREAM ELECTRICITY BALANCE

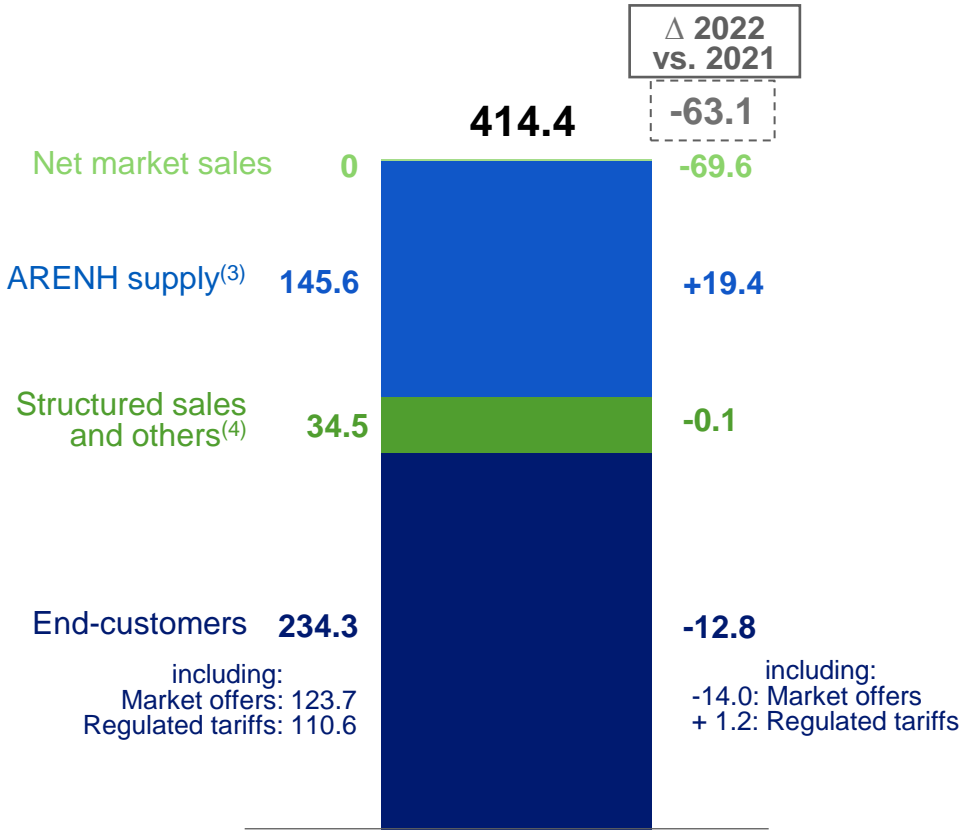
OUTPUT / PURCHASE

In TWh



CONSUMPTION / SALES

In TWh



NB : EDF excluding French islands electrical activities.

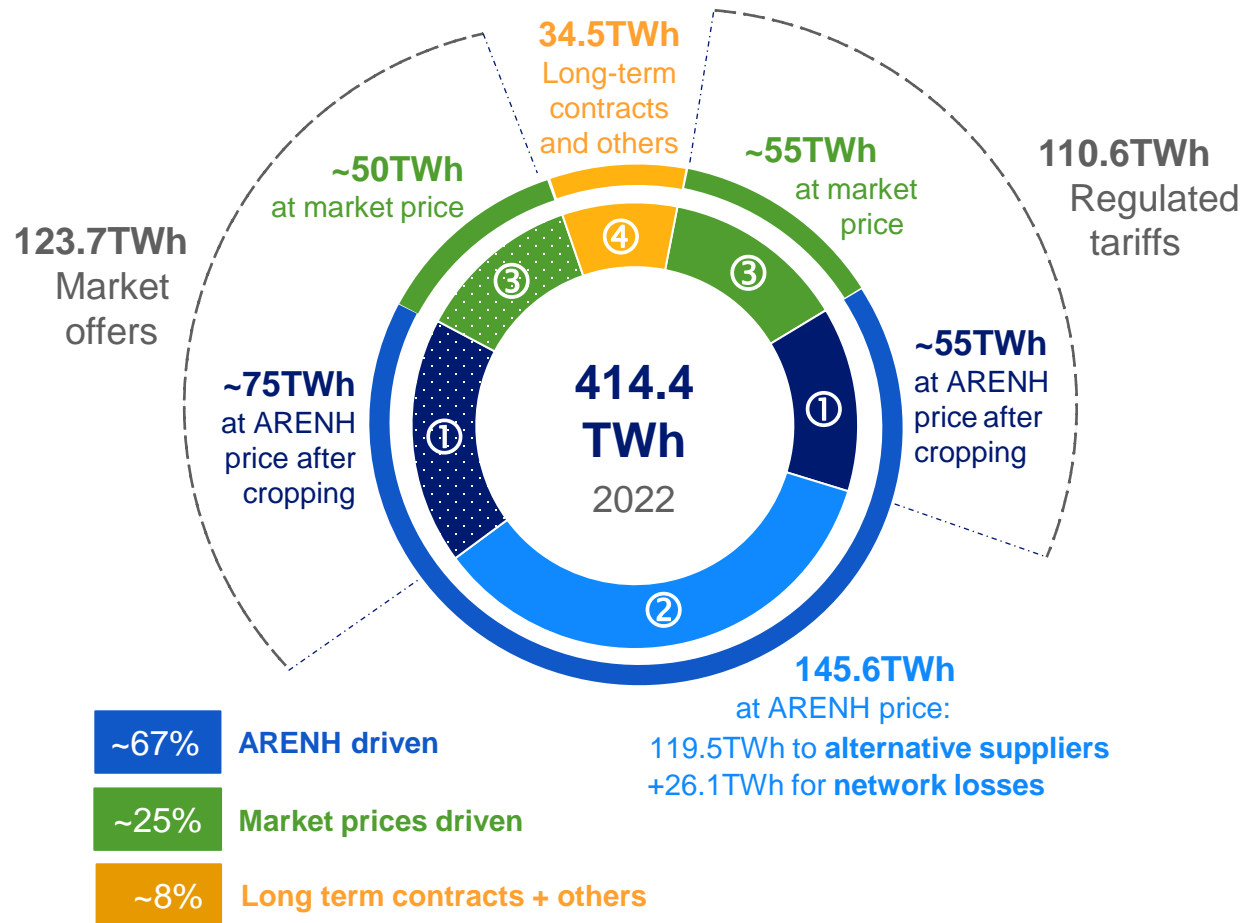
(1) O/w required purchases from eligible suppliers within the frame of the specific additional ARENH mechanism.

(2) Hydro output after deduction of pumped volumes: 25TWh in 2022 / 35.9TWh in 2021.

(3) O/w 19.5TWh as for required sales of ARENH additional volumes to the alternative suppliers (see the decree of March 2022).

(4) Including hydro pumped volumes of 7.4TWh in 2022 / 5.9TWh in 2021.

FRANCE: DISTRIBUTION OF ELECTRICITY SALES⁽¹⁾ ACCORDING TO THEIR MARKET PRICE EXPOSURE



① Volumes sold at **ARENH price** following the cost-stacking formula in the **regulated sales tariffs** (essentially blue residential and non-residential tariffs) and to EDF final customers under **market-based contracts**⁽²⁾

② Volumes sold at **ARENH price**⁽³⁾, which include:

- the ARENH volumes of **100TWh** that can be requested by **alternative suppliers**
- the **19.5TWh** additional volume to the alternative suppliers in 2022 as required by the exceptional governmental measures (decree of March 2022)
- The purchase of losses by **network operators** for **26.1TWh**

... **or at market price** if such price is lower than the ARENH arbitration threshold (ARENH price - capacity price) – not applicable in 2022

③ Volumes sold at **market price**, whatever the price, which include:

- Part of the volumes sold to EDF final customers: “market complement supply” in the regulated tariffs⁽⁴⁾, balance of the volumes sold to clients under market-based contracts
- Volumes sold on wholesale power markets

④ Contracts at **negotiated prices** that do not follow a market-indexed structure, and hydro pumped volumes of 7.4TWh

(1) Cf. “France: upstream / downstream electricity balance” p.86. Estimated distribution based on the situation in 2022, in particular in terms of EDF downstream market shares.

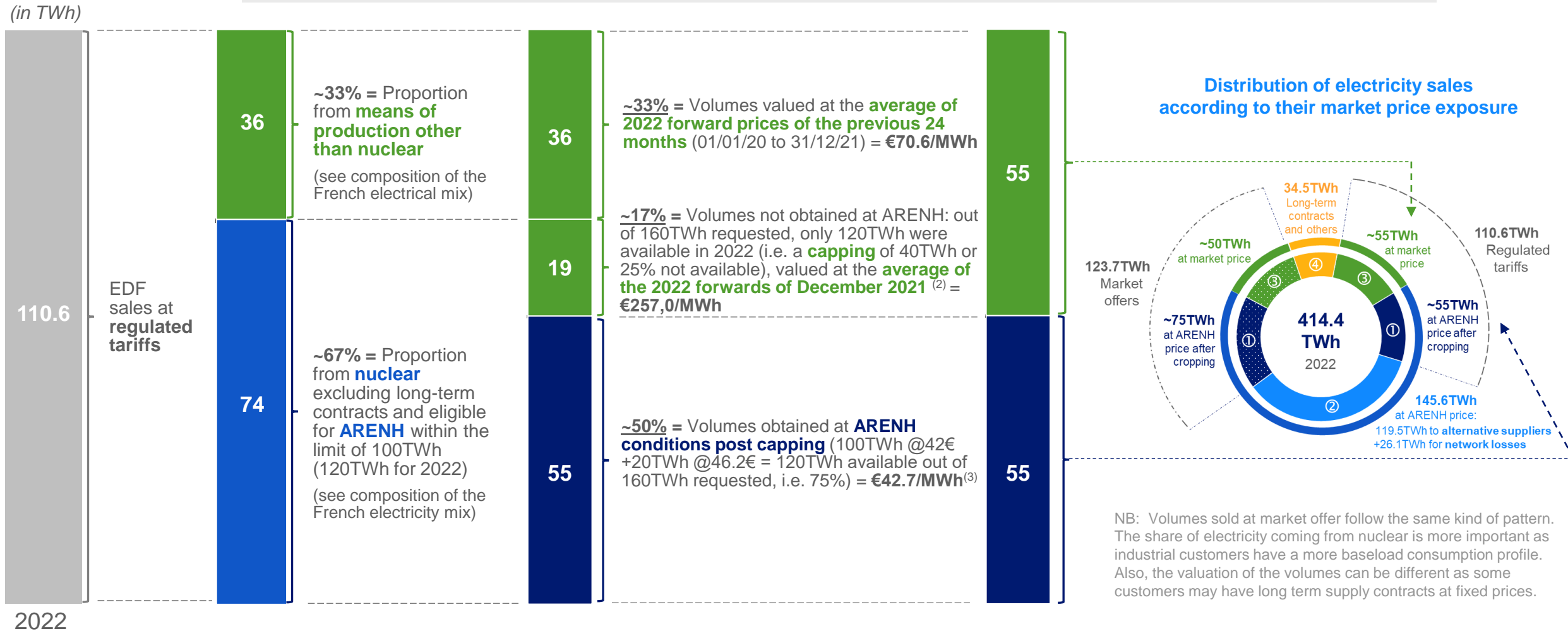
(2) Related to the replication of the sourcing cost structure of alternative suppliers: shares of the volumes corresponding to the “ARENH rights” including replication of additional volumes to the alternative suppliers.

(3) EDF is subjected to the arbitrage between the two prices and its date of exercise is variable depending on the volumes (it takes place at the latest at the time of the ARENH end of year subscription window for a delivery the following year).

(4) Related to the replication of the sourcing cost structure of alternative suppliers: the balancing volumes sourced on the market which exceed the “ARENH rights”.

ILLUSTRATION OF THE ENERGY PART CALCULATION IN THE REGULATED TARIFFS FOR 2022⁽¹⁾

The energy part calculation in the regulated tariffs is replicating the sourcing cost of the alternative suppliers



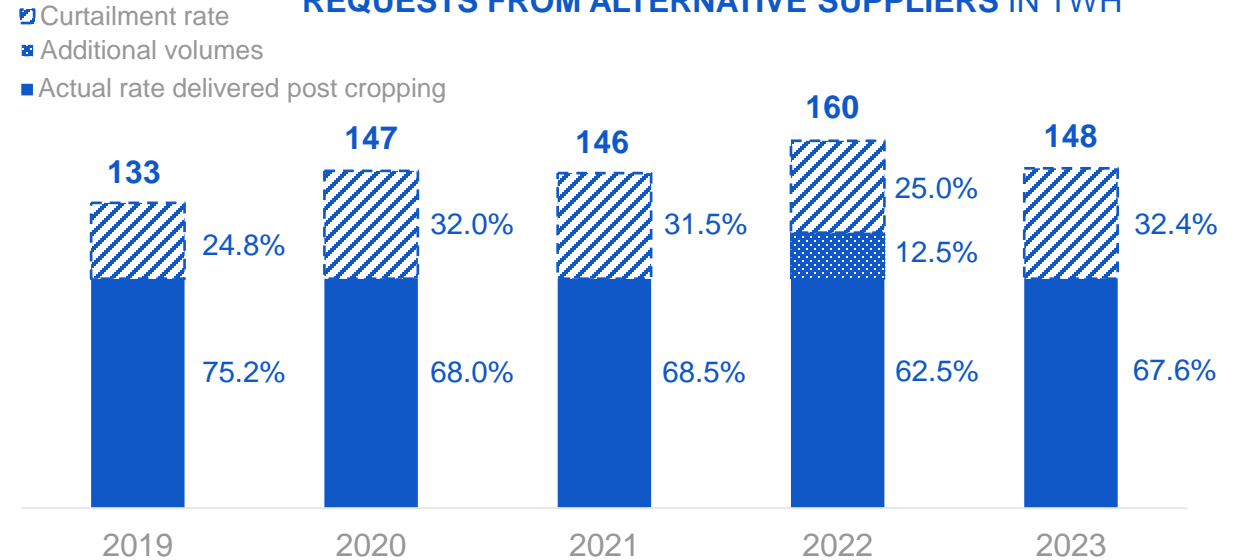
- (1) 2022 was a particular year as regulatory measures increased exceptionally in 2022 the volume of ARENH available to alternative suppliers from 100 to 120TWh.
- (2) Consideration of future market prices from 02/12/21 to 23/12/21, post announcement of the results of the November ARENH window (160TWh requested for 120TWh finally available post exceptional regulatory measures, leading to sourcing on the market of 40TWh "clipped", the so called "cropping effect").
- (3) Post results of the November 2021 ARENH auction, taking into account the exceptional regulatory measures increasing ARENH volume available to alternative suppliers from 100 to 120TWh

ARENH: VOLUMES ALLOCATED TO ALTERNATIVE SUPPLIERS

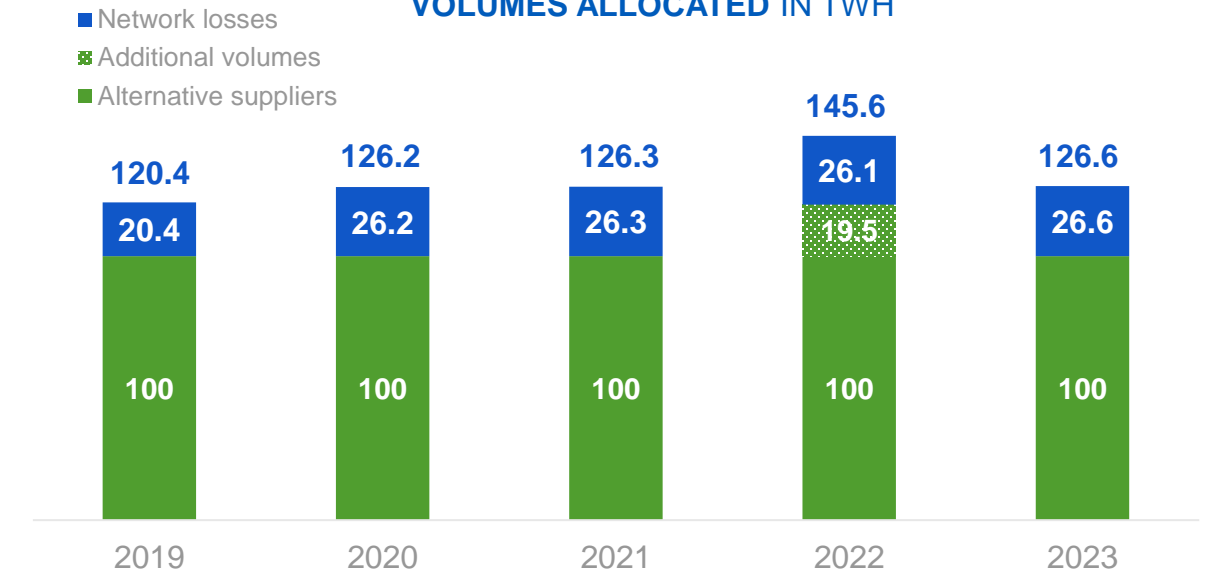
- Historical situation: maximum annual sales volume of 100TWh to alternative suppliers for final consumption and ~26TWh for network losses coverage
- Volume sold for 2022: 145.6TWh including 19.5TWh added as part of the exceptional regulatory measures (cf. Decree published on 12 March 2022) and 26.1TWh sold for network losses coverage
- Consequently, from 1 April to 31 December 2022: delivery of 19.5TWh of additional ARENH volume at a price of €46.2/MWh, in exchange for the resale by the alternative suppliers to EDF of an equivalent volume, at a price of €256.98/MWh

Source: CRE.

REQUESTS FROM ALTERNATIVE SUPPLIERS IN TWH

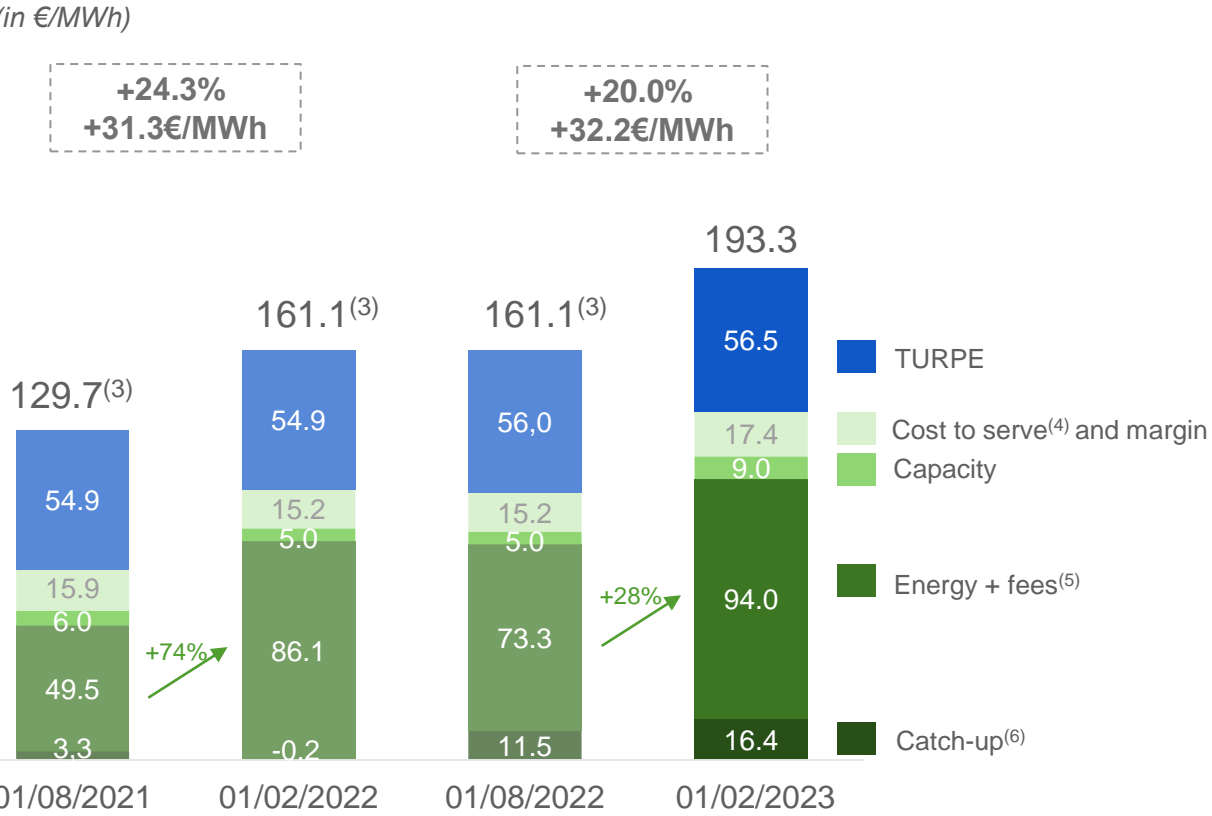


VOLUMES ALLOCATED IN TWH

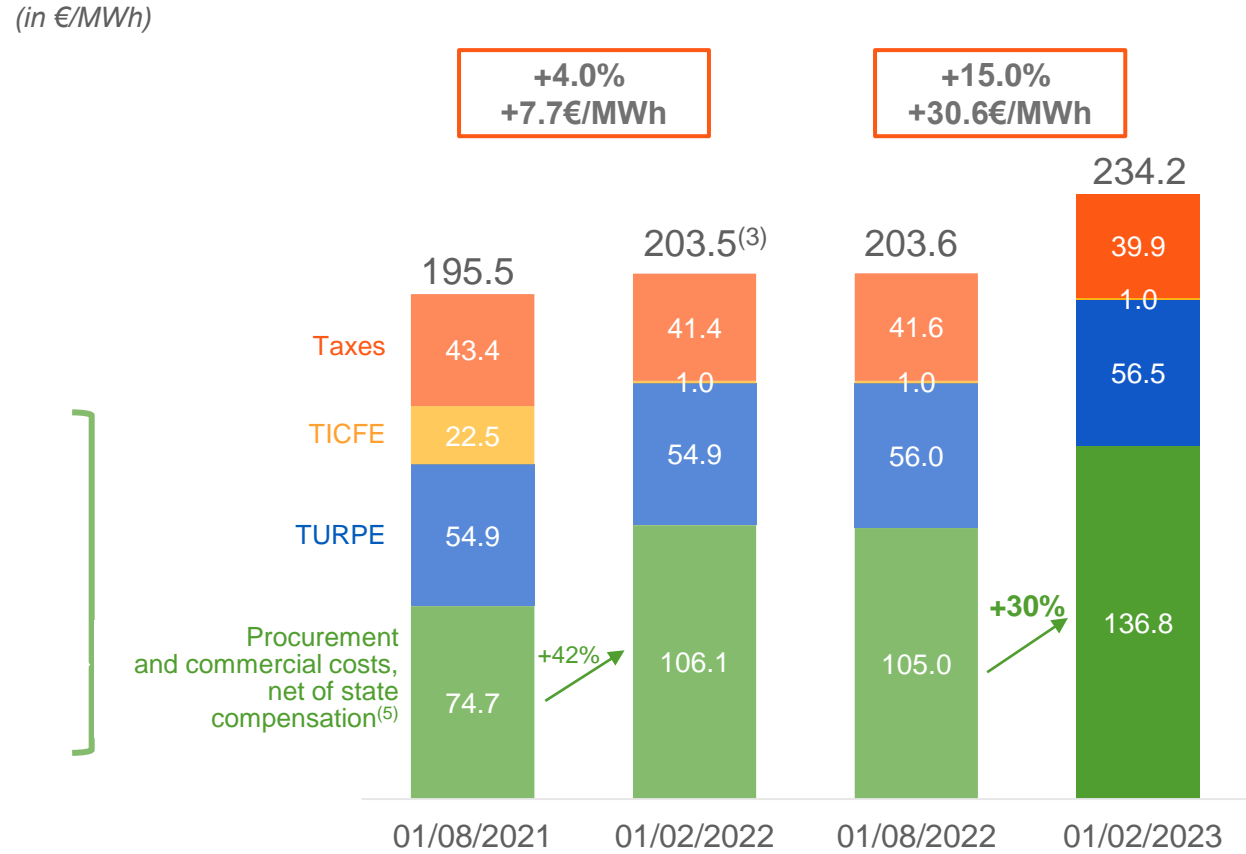


REGULATED SALES TARIFFS IN FRANCE : CHANGE IN 2021-2023

RESIDENTIAL BLUE TARIFF EXCLUDING TAXES⁽¹⁾⁽²⁾



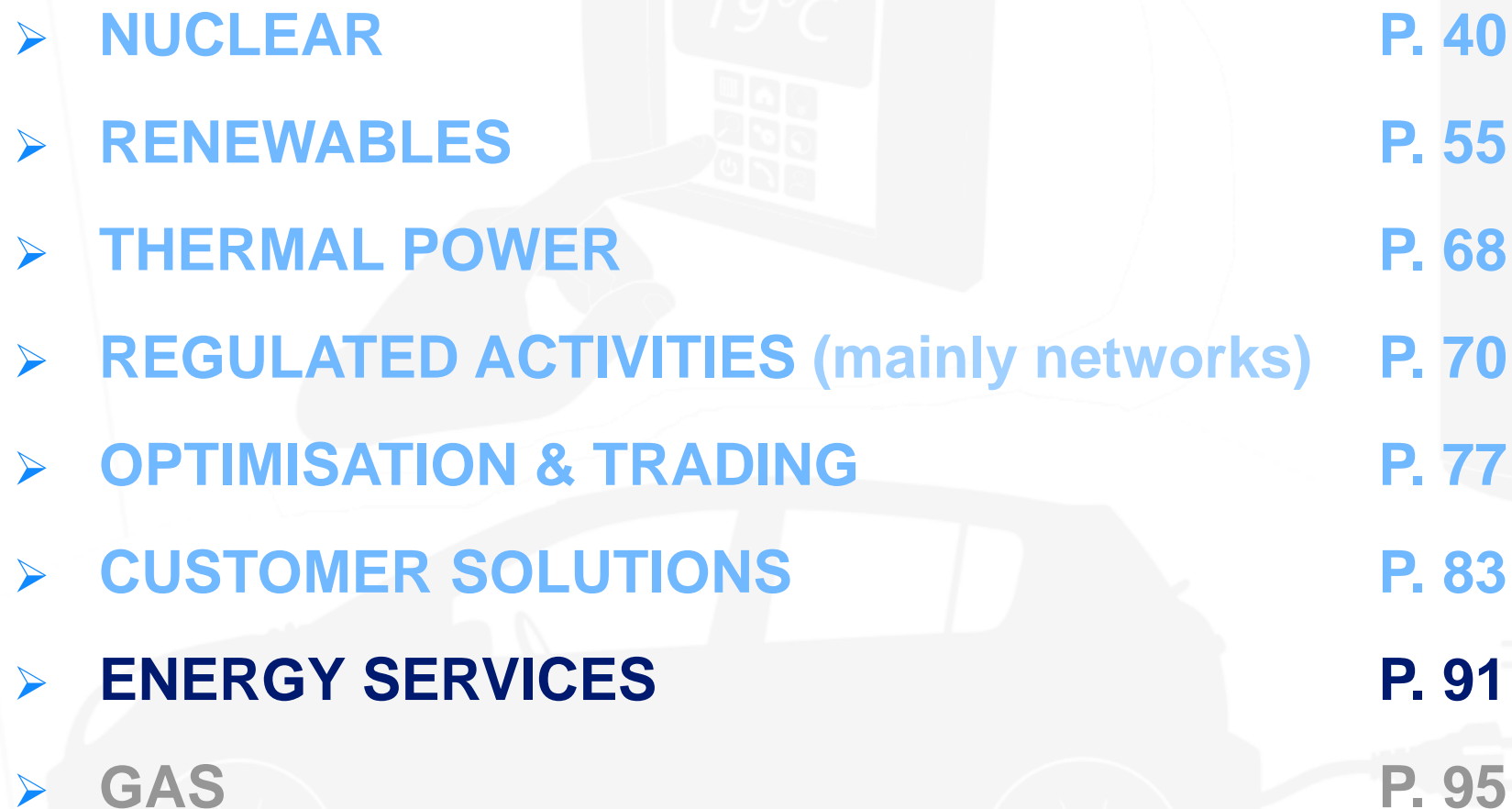

AVERAGE BILL BREAKDOWN VAT INCLUDED
(BLUE RESIDENTIAL CUSTOMER)



(1) Source: *Journal Officiel*.
(2) The figures are based on an average calculation on customers portfolio at the Regulated Sales Tariffs at end-2021 (latest available database to date).
(3) Due to rounding, the total is not strictly equal to the sum of the components.
(4) Including cost of Energy Efficiency Certificates.

(5) For 2022 and 2023, this part takes into account the tariff cap for the current year. In February 2023, in particular, this part includes the catch-up under the 2022 cap and a **discount of €143.2/MWh** under the 2023 tariff cap. **This discount is compensated by the CSPE under the finance law for 2023** and will therefore not be subject to a catch-up in 2024.
(6) Remaining tariff increase decided in Year-1 but invoiced in Year+1.

EDF GROUP MAIN BUSINESSES

- 
- 
- **NUCLEAR** P. 40
 - **RENEWABLES** P. 55
 - **THERMAL POWER** P. 68
 - **REGULATED ACTIVITIES (mainly networks)** P. 70
 - **OPTIMISATION & TRADING** P. 77
 - **CUSTOMER SOLUTIONS** P. 83
 - **ENERGY SERVICES** P. 91
 - **GAS** P. 95

ENERGY SERVICES FOR THE GROUP'S RESIDENTIAL & B2B CUSTOMERS

RESIDENTIAL CUSTOMERS

The range of service offers is growing:



Monitoring of heating, air quality, charging station of electric vehicle, etc. by voice and by touch



Installation, maintenance and repair of heating and hot water equipment



Services for sustainable housing and electric mobility: energy renovation and comfort works, installation of charging stations and heating equipment (together with IZI Confort)



Electric mobility when traveling with the Izivia Pass



Solar photovoltaic solutions « Mon Soleil & moi » for self-consumption

B2B CUSTOMERS

➤ Projects as different as heat networks, intelligent lighting, low-carbon decentralised generation, energy management, sustainable mobility or eco-neighbourhoods

- **Smart building:** Energy efficiency, energy management, self-consumption, heat recovery, ...



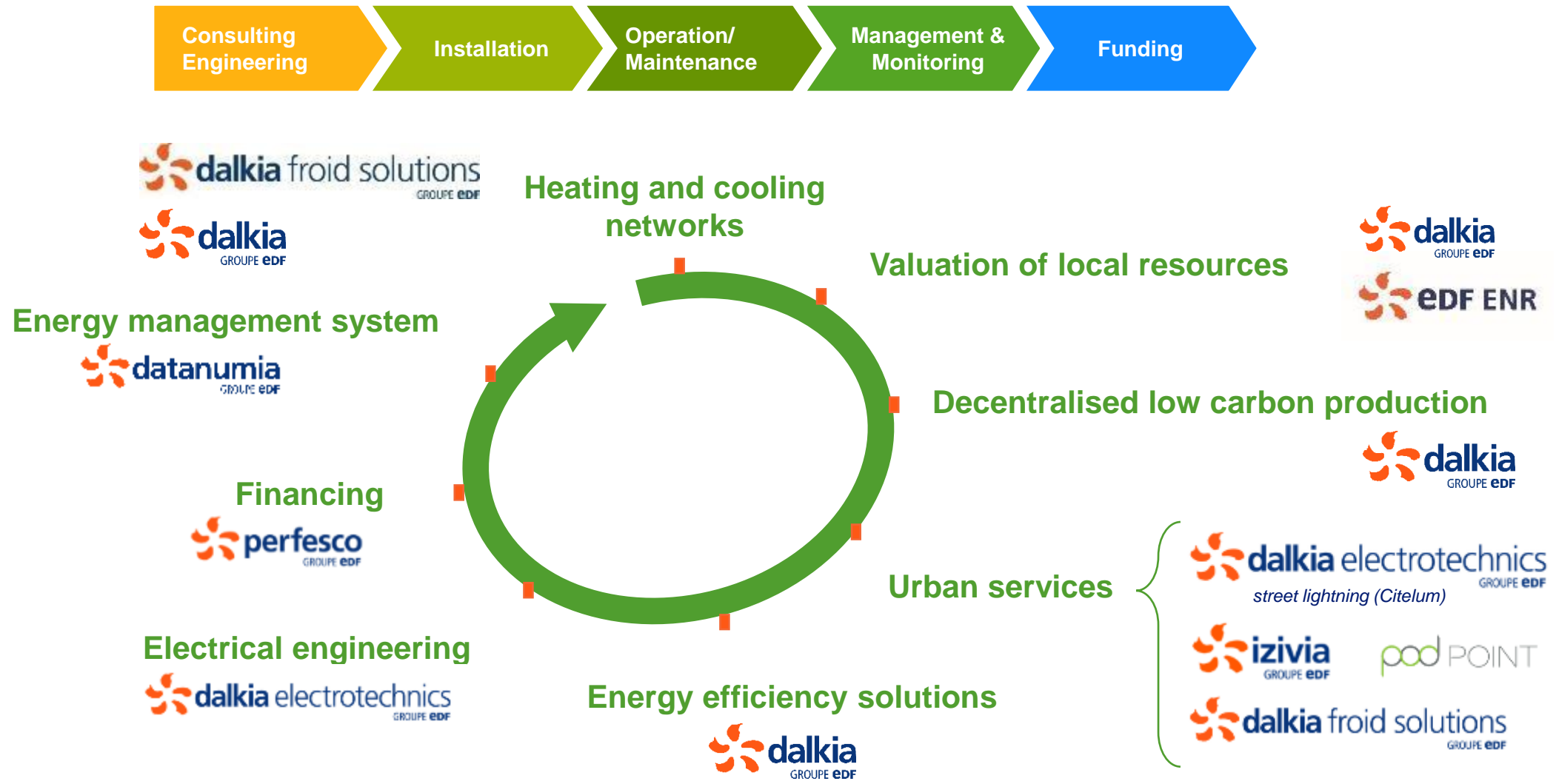
- **Smart factory:** Data, artificial intelligence, predictive maintenance, energy efficiency, flexibility management, circular economy, economic performance, ...



- **Smart city:** Local production, heat networks, renewable and recovery energy, thermal and electrical smart grids, collective self-consumption, urban services, ...



SERVICE SUBSIDIARIES: EXPERTISE ON THE ENTIRE B2B ENERGY CHAIN



DALKIA: A MAJOR PLAYER IN THE ENERGY TRANSITION AT THE SERVICE OF ITS CUSTOMERS

- Leader in energy services in France, Dalkia has been helping regions accelerate their sustainable energy performance for 80 years

ENVIRONMENTAL PERFORMANCE

Dalkia enables its customers to reduce their greenhouse gas emissions while

- developing renewable and recovery energies locally,
- and working on energy efficiency and the reduction of consumption

60.3% of renewable energies & recovery of heat networks⁽¹⁾ in 2021

4.2 million tons CO₂ avoided⁽²⁾ in 2022

2026 ambition
65% of renewable energies

2026 ambition
6mt CO₂ avoided



(1) Networks in France (SNCU scope).

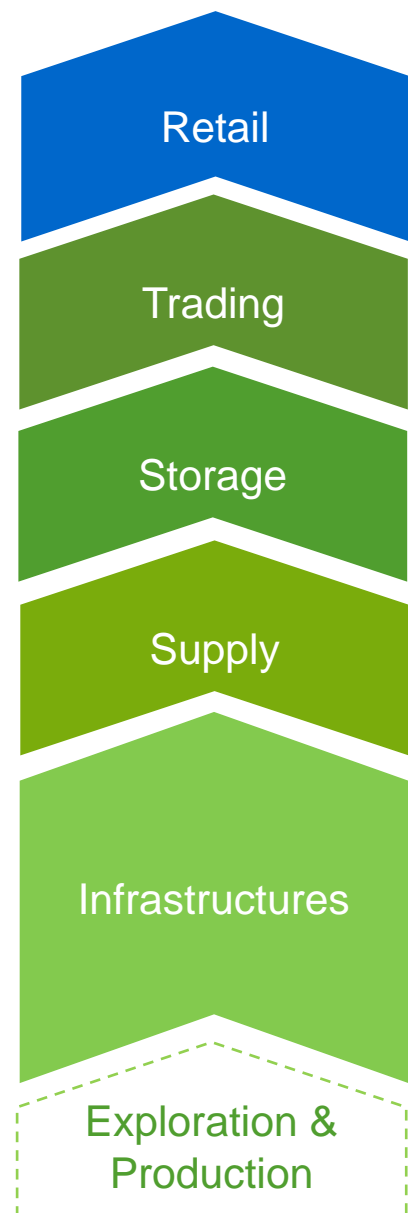
(2) 4m tonnes excluding CO₂ thanks to gas cogeneration CHP.

EDF GROUP MAIN BUSINESSES

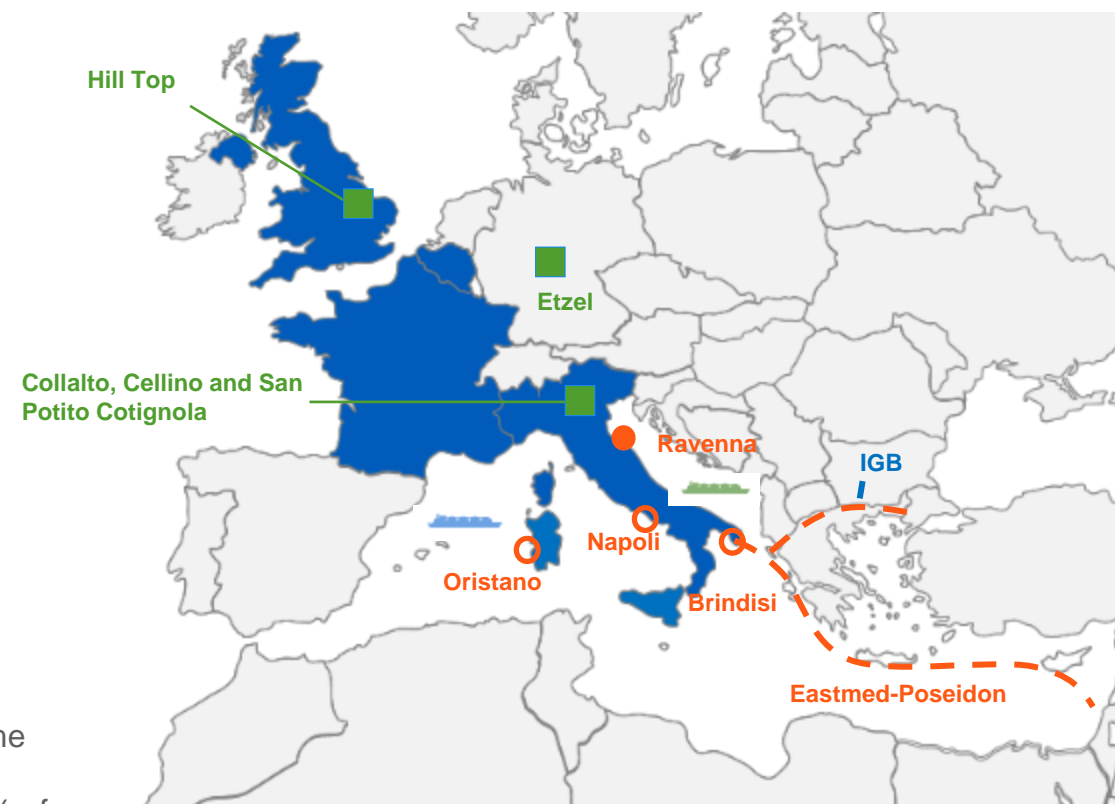


- **NUCLEAR** **P. 40**
- **RENEWABLES** **P. 55**
- **THERMAL POWER** **P. 68**
- **REGULATED ACTIVITIES (mainly networks)** **P. 70**
- **OPTIMISATION & TRADING** **P. 77**
- **CUSTOMER SOLUTIONS** **P. 83**
- **ENERGY SERVICES** **P. 91**
- **GAS** **P. 95**

EDF IS WELL POSITIONED ON THE GAS VALUE CHAIN



- Presence on the European gas market for over 10 years, with ~6.4m customers and ~157TWh sold⁽¹⁾
- Dual-fuel offers (electricity and gas) and value-added services to clients
- Supply of EDF gas fired power plants
- Seeking arbitrages and optimising supply strategies
- Manage flexibility and regulated activity in Italy
- Examples: Cellino, Collalto and San Potito & Cotignola (Italy), Etzel storage (Germany)
- 6 gas import LT contracts: a gas portfolio well diversified and not dependent on Russia
- 1 LT LNG contract (USA) expected in H2 2023
- Small scale LNG to reduce emissions in heavy & maritime transport
- LT LNG regassification capacity available in France (61% of Dunkerque), Italy (80% of Rovigo) & Belgium (Zeebrugge)
- Development of import infrastructures pipelines: IGB started commercial operation in 2022 & EastMed under development
- Development of new gas uses & green gas (hydrogen & biomethane)
- Completion of Algerian E&P asset divestment expected in S1 2023⁽²⁾



- Main gas downstream markets
- Storage centers
- Gas pipelines under development
- Gas pipelines in operation since October 2022
- LNG storage inaugurated in October 2021
- LNG storage under development
- 1 LNG vessel under construction (174k cubic meters)
- 1 LNG vessel inaugurated in October 2021 (30k cubic meters)

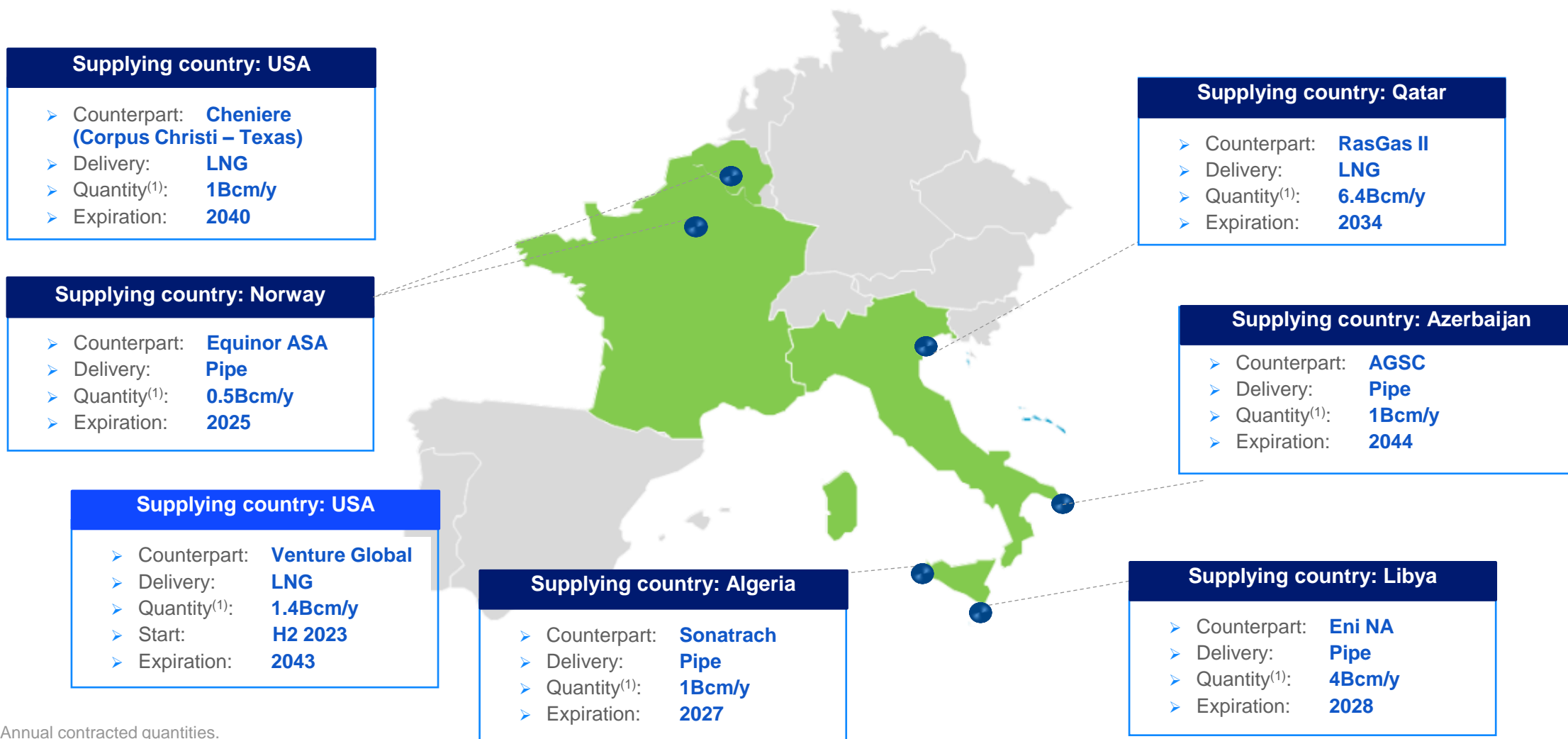
(1) See [p.84](#) for details of the number of gas end-customers and sales in TWh per country.

(2) Divestment of E&P activities in Algeria is subject to validation by local authorities and is expected to conclude in the first half of 2023.

GAS SUPPLY SOURCES AS OF TODAY

Gas supply portfolio based mainly on a series of long-term contracts

- The total volume of EDF's long-term gas contracts is 13.9bcm/year⁽¹⁾, of which 12.4bcm imported by Edison



(1) Annual contracted quantities.



TABLE OF CONTENTS

P.4
GROUP
STRATEGY

P.30
COUNTRY
PROFILE

P.39
EDF GROUP MAIN
BUSINESSES

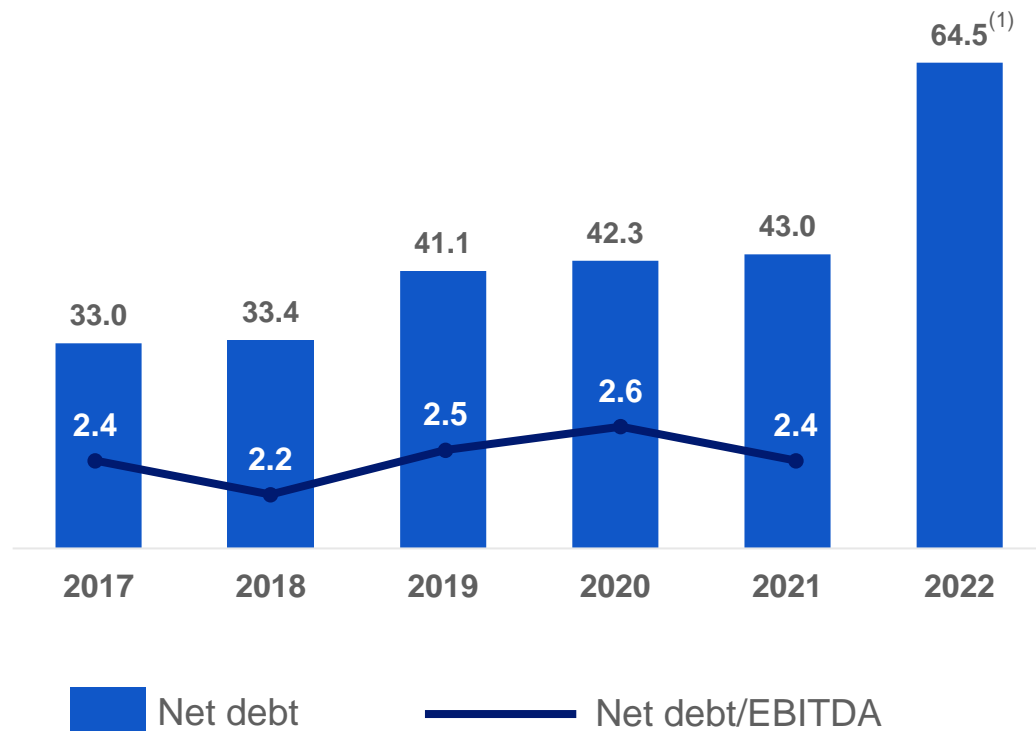
P.98
FINANCIAL DEBT
& DEDICATED
ASSETS

As a major player in energy transition, the EDF group is an integrated energy company active in all areas of the electricity industry and some areas of the gas industry: power generation using nuclear, renewable and thermal energies; electricity transmission and distribution; sales; energy services ; energy trading.

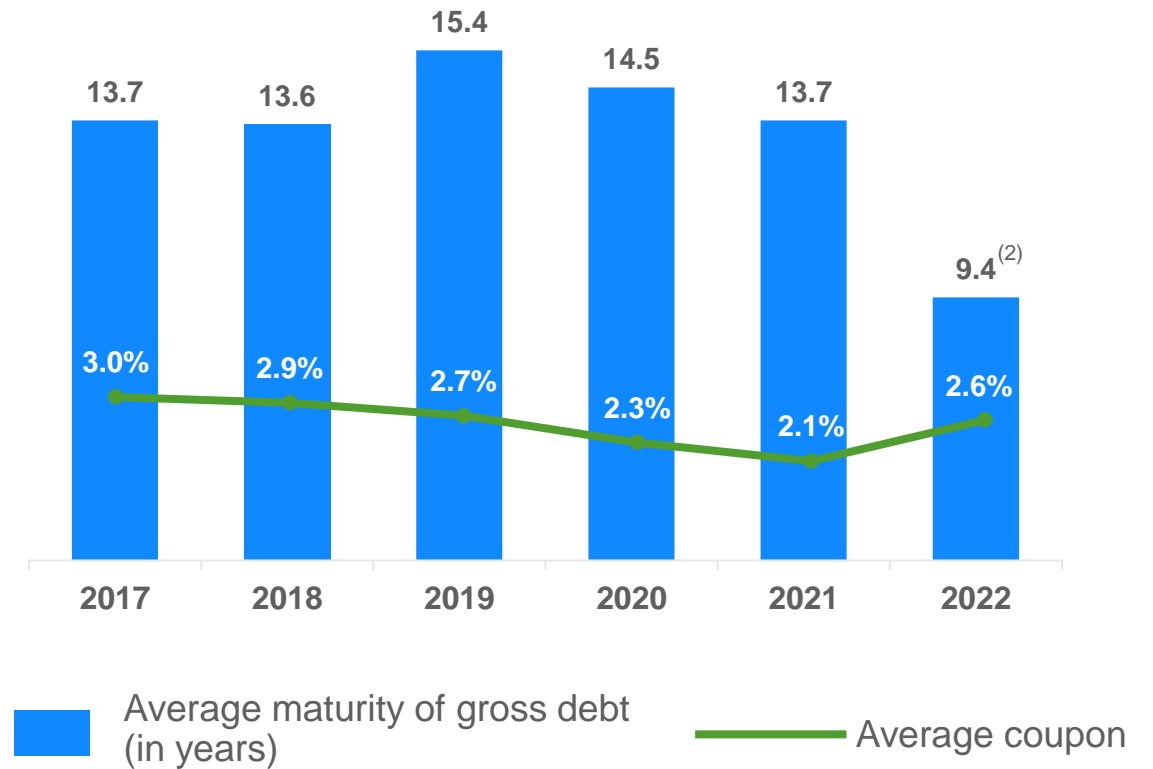
HISTORICAL FINANCIALS: FINANCIAL DEBT

Net debt and net debt/EBITDA evolution

In billions of euros



Debt maturity and coupon evolution

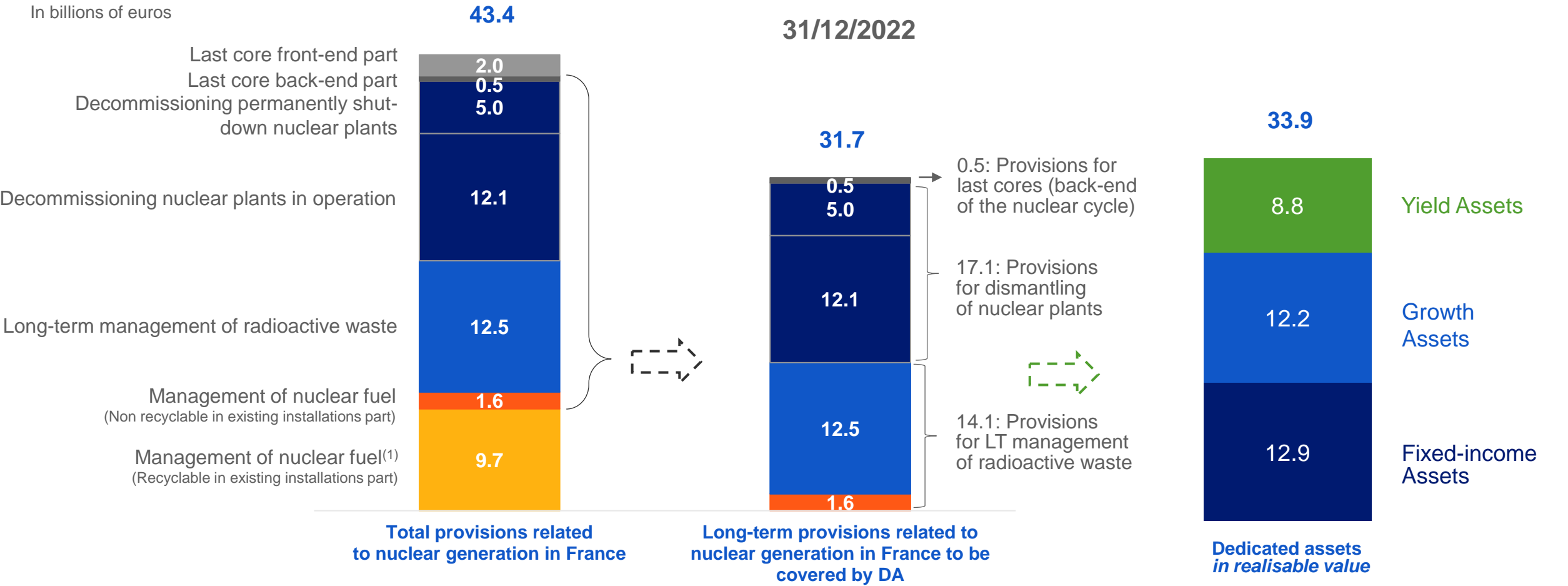


(1) As 2022 EBITDA is negative, 2022 net debt/EBITDA is not applicable.

(2) The decrease in debt maturity is mainly linked to the €15bn term loans signed in 2022.

PROVISIONS RELATED TO NUCLEAR GENERATION IN FRANCE AND PART TO BE COVERED BY DEDICATED ASSETS

In billions of euros



- At 31 December 2022, the regulatory coverage is **107.1%** (109.3% at 31 December 2021)
- No allocation to DAs to be made in 2022 in respect of 2021 owing to a coverage rate of over 100%, in accordance with the regulation applicable since 1 July 2020

DEDICATED ASSETS: PERFORMANCE AND ALLOCATION

Global 2022 performance: -8.5%



YIELD ASSETS:
+11.2%

Resilient yield of the Infrastructure and Property assets

- Portfolio of non-listed assets only (EDF Invest)
- Effective sector and geographical diversification



GROWTH ASSETS:
-15.8%

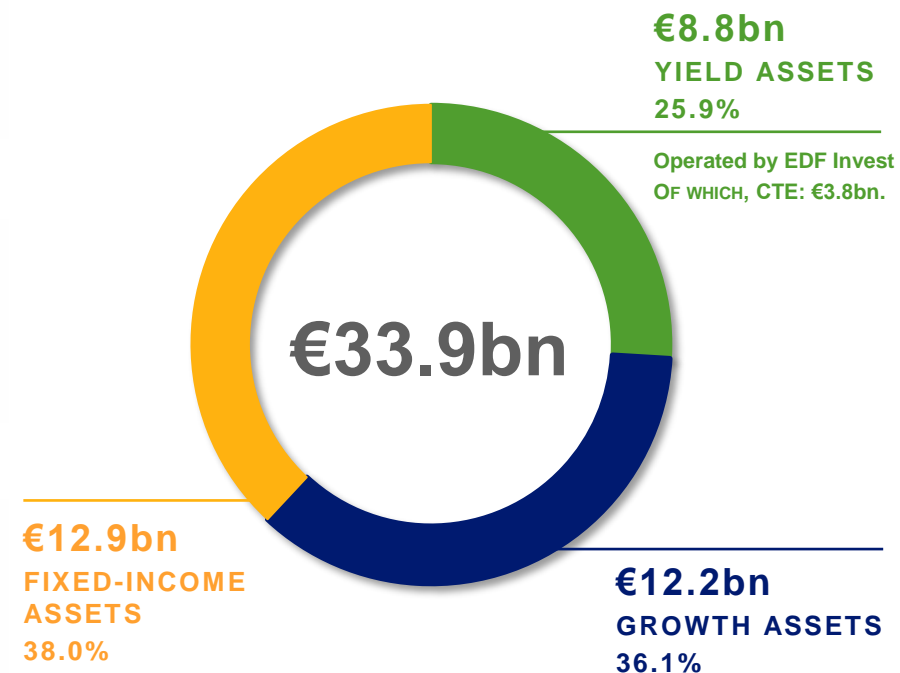
- Sharp decline in equities valuation, in a context of sustained inflation and interest rates hikes
- Higher volatility in 2022, but in line with the market



FIXED-INCOME ASSETS: -12.1%

- Rising interest rates and wider credit spreads weighed on bonds valuation.
- However reduced sensitivity of the portfolio and fund selection helped to limit the decline in value.

2022 allocation



Performance +5.6% on an annualised basis since early 2004

A strategic allocation was defined in 2018 to improve the adequacy of the profile of dedicated assets to the long-term nature of the disbursements to be covered (Growth assets: 40%, Fixed-income assets: 30%, Yield assets: 30%).

The targets of the new allocation will be met progressively, as investments are made, entailing a gradual rebalancing from fixed-income assets to yield assets.

EDF INVEST, THE INVESTMENT PLATFORM FOR NON-LISTED ASSETS

MANAGEMENT OF DEDICATED ASSETS...

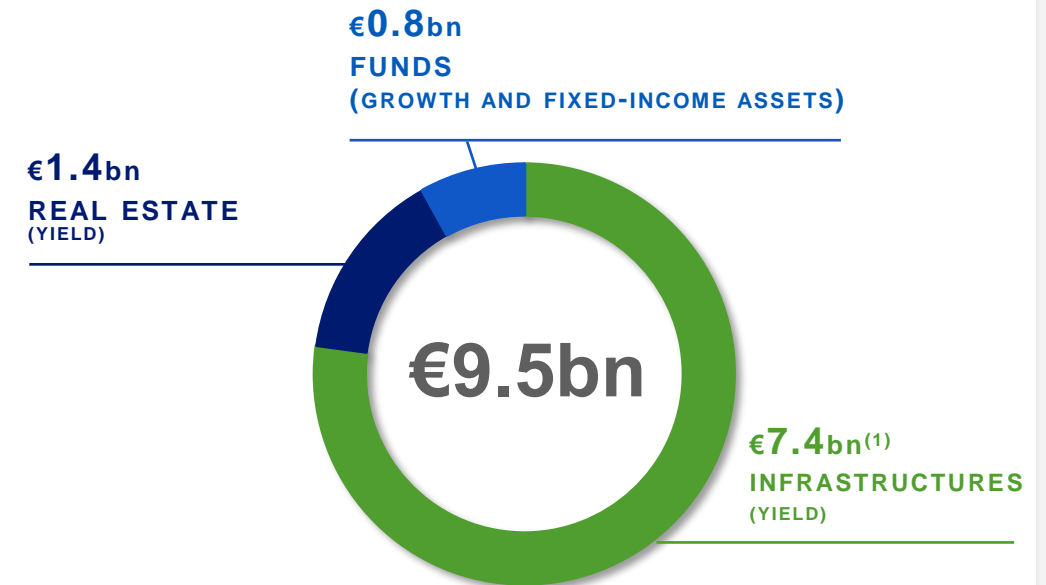
- EDF Invest is **the unlisted investment arm of EDF's Dedicated Assets**
- Among Dedicated Assets, unlisted assets are invested in **various geographical zones (mainly OECD) and sectors, under 3 assets classes**
 - Infrastructure
 - Real Estate
 - Funds portfolios

... FOR A DIVERSIFIED PORTFOLIO

In 2022, EDF Invest mainly **diversified** its portfolio through the acquisition of **minority stakes in infrastructure assets**

- Telecom: Norlys Fiber, a **fibre** optic network in Denmark
- Digital: DataBank, **data centres** in the USA

PORTFOLIO BREAKDOWN AT 31 DECEMBER 2022



Differences in totalisation may arise from the rounding of figures

(1) Of which CTE: €3.8bn.



2022 FACTS & FIGURES