



---

---

# SALES AND HIGHLIGHTS 2017

FIRST QUARTER

---

---

APPENDICES





# DISCLAIMER

This presentation does not constitute an offer to sell securities in the United States or any other jurisdiction.

No reliance should be placed on the accuracy, completeness or correctness of the information or opinions contained in this presentation, and none of EDF representatives shall bear any liability for any loss arising from any use of this presentation or its contents.

The present document may contain forward-looking statements and targets concerning the Group's Strategy, financial position or results. EDF considers that these forward-looking statements and targets are based on reasonable assumptions as of the present document publication, which can be however inaccurate and are subject to numerous risks and uncertainties. There is no assurance that expected events will occur and that expected results will actually be achieved. Important factors that could cause actual results, performance or achievements of the Group to differ materially from those contemplated in this document include in particular the successful implementation of EDF strategic, financial and operational initiatives based on its current business model as an integrated operator, changes in the competitive and regulatory framework of the energy markets, as well as risk and uncertainties relating to the Group's activities, its international scope, the climatic environment, the volatility of raw materials prices and currency exchange rates, technological changes, and changes in the economy.

Detailed information regarding these uncertainties and potential risks are available in the reference document (Document de référence) of EDF filed with the *Autorité des marchés financiers* on 6 March 2017, which is available on the AMF's website at [www.amf-france.org](http://www.amf-france.org) and on EDF's website at [www.edf.com](http://www.edf.com).

EDF does not undertake nor does it have any obligation to update forward-looking information contained in this presentation to reflect any unexpected events or circumstances arising after the date of this presentation.



# TABLE OF CONTENTS

⇒ Consolidated sales	P. 4
⇒ Strategy & investments	P. 7
⇒ EDF Énergies Nouvelles	P. 18
⇒ France	P. 21
⇒ International & other activities	P. 32
⇒ Markets	P. 36



---

---

# SALES AND HIGHLIGHTS 2017

FIRST QUARTER

---

---

APPENDICES  
CONSOLIDATED SALES



# CHANGE IN SALES BY REPORTING SEGMENT

In millions of Euros	Q1 2016	Q1 2017	Δ%	Δ% org. <sup>(1)</sup>
France – Generation and supply activities	11,166	11,354	+1.7	+1.7
France – Regulated activities	4,784	4,862	+1.6	+1.6
United Kingdom	2,929	2,568	-12.3	-1.8
Italy	3,119	2,797	-10.3	-10.4
Other International	1,546	1,467	-5.1	-2.3
Other activities	1,999	2,153	+7.7	+5.9
Inter-segment operations <sup>(2)</sup>	(4,101)	(4,073)	-0.7	-0.7
<b>Group</b>	<b>21,442</b>	<b>21,128</b>	<b>-1.5</b>	<b>0.0</b>

(1) Organic change at constant scope and exchange rates – financial information reflecting the new segmental reporting since 31.12.2016

(2) As of 2016, breakdown of sales across the segments, before inter-segment eliminations

## SALES BY REPORTING SEGMENT

In millions of Euros	TOTAL GROUP	France – Generation and supply activities	France – Regulated activities	United Kingdom	Italy	Other International	Other activities	Inter-segment operations <sup>(2)</sup>
<b>Q1 2016 sales</b>	<b>21,442</b>	<b>11,166</b>	<b>4,784</b>	<b>2,929</b>	<b>3,119</b>	<b>1,546</b>	<b>1,999</b>	<b>(4,101)</b>
Forex	(264)	-	-	(307)	-	38	5	-
Scope	(49)	-	-	-	2	(82)	31	-
Organic change <sup>(1)</sup>	(1)	188	78	(54)	(324)	(35)	118	28
<b>Q1 2017 sales</b>	<b>21,128</b>	<b>11,354</b>	<b>4,862</b>	<b>2,568</b>	<b>2,797</b>	<b>1,467</b>	<b>2,153</b>	<b>(4,073)</b>

(1) Organic change at constant scope and exchange rates – financial information reflecting the new segmental reporting since 31.12.2016

(2) As of 2016, breakdown of sales across the segments, before inter-segment eliminations



---

---

# SALES AND HIGHLIGHTS 2017

FIRST QUARTER

---

---

APPENDICES  
STRATEGY AND INVESTMENTS



# ELECTRICITY OUTPUT

Generation output from fully consolidated entities

In TWh	Q1 2016		Q1 2017	
Nuclear	132.7	79%	125.4	76%
Coal	6.0	4%	6.9	4%
Fuel oil	1.3	0%	1.6	1%
Gas	11.4	7%	15.0	9%
Hydro <sup>(1)</sup>	13.0	8%	11.5	7%
Other Renewables	4.1	2%	4.2	3%
<b>Group</b>	<b>168.5</b>	<b>100%</b>	<b>164.6</b>	<b>100%</b>

(1) Hydro generation after pumping is 11.1TWh in Q1 2016 and 9.7TWh in Q1 2017

# HEAT OUTPUT

Generation output from fully consolidated entities

In TWh	Q1 2016		Q1 2017	
Coal	3.9	27%	4.1	26%
Fuel oil	0.1	1%	0.1	1%
Gas	8.5	59%	8.2	53%
Other Renewables <sup>(1)</sup>	1.9	13%	2.0	13%
Others <sup>(2)</sup>	-	-	1.1	7%
<b>Group</b>	<b>14.4</b>	<b>100%</b>	<b>15.5</b>	<b>100%</b>

(1) Category corresponding to installations operating with woody biomass, landfill gas, sewage treatment plant gas and biogases

(2) Category implemented in 2017, combining part of the heat generation by incineration and the recovery of heat and electricity from other industrial processes

# RENEWABLE OUTPUT

Generation output from fully consolidated entities

In TWh	Q1 2016		Q1 2017	
Hydro <sup>(1)</sup>	13.0	76%	11.5	73%
Wind	3.4	20%	3.5	22%
Solar	0.1	1%	0.2	1%
Biomass	0.4	2%	0.4	3%
Marine energy	0.1	1%	0.1	1%
<b>Total electricity Group</b>	<b>17.0</b>	<b>100%</b>	<b>15.7</b>	<b>100%</b>
<b>Total heat Group</b>	<b>1.9</b>	<b>-</b>	<b>2.0</b>	<b>-</b>

(1) Hydro generation after pumping is 11.1TWh in Q1 2016 and 9.7TWh in Q1 2017

# CO<sub>2</sub> EMISSIONS

Generation output from fully consolidated entities

## Net emissions<sup>(1)</sup> by segment

	In kt				In g/kWh <sup>(2)</sup>	
	Q1 2016		Q1 2017		Q1 2016	Q1 2017
France – Generation and supply activities	1,585	11%	3,345	20%	13	27
France – Regulated activities	766	6%	724	5%	508	479
United Kingdom	2,235	16%	2,676	16%	118	134
Italy	2,044	15%	2,271	14%	394	339
Other International	4,910	35%	5,048	30%	590	429
Other activities	2,322	17%	2,553	15%	387	177
<b>Group</b>	<b>13,862</b>	<b>100%</b>	<b>16,617</b>	<b>100%</b>	<b>81</b>	<b>93</b>

## Group's emissions below the 100g/kWh threshold

(1) Direct CO<sub>2</sub> emissions, excluding life cycle analysis (LCA) of generation plants and fuel

(2) The calculation methodology for the CO<sub>2</sub> content of EDF Group in kWh evolved in 2016 to adopt a more broad-based method taking into account electricity and heat. Indeed, the share of heat in the Group's energy mix has increased, rising from 5.5% in 2014 to 6.1% in 2015 and to 6.6% in 2016

# FLAMANVILLE 3 EPR

## Construction progress as of 31 March 2017

- Completion of the main civil engineering work
- 1<sup>st</sup> milestone of the new roadmap achieved on 15 March 2016, with finalisation of the primary coolant system, and the installation and assembly of the large components (all four steam generators, reactor vessel, pressurizer and reactor coolant pumps)
- Transfer of the control room to the teams that will operate the reactor
- Progress of electromechanical erection exceeded 80%
- Start of plant system test (pumping station, fuel building, turbo-generator unit...)

## Main steps in 2017

- Beginning of the system performance tests on 15 March 2017, in parallel of finalization of mechanical erection
- Opinion of ASN<sup>(2)</sup> on the results of the test programme aiming at proving the serviceability of bottom head and closure head of the reactor pressure vessel, expected at the end of 1<sup>st</sup> semester 2017

## One 1,650MW EPR under construction



## Roadmap for the Flamanville 3 project, drawn up in September 2015:

- Project cost set at €<sub>2015</sub>10.5bn<sup>(1)</sup>
- First fuel loading and start –up of the reactor expected end 2018
- Ramp up 2019: connection to the grid in the 2<sup>nd</sup> quarter and then 100% capacity in the 4<sup>th</sup> quarter

(1) Excluding interim interests

(2) ASN: *Autorité de Sûreté Nucléaire*



# CHINA TAISHAN 1 & 2 (EDF 30%)

## Construction progress as of 31 March 2017

- Unit 1
  - Finalization of electromechanical erection and system performance testing underway
  - Containment building of reactor building, hydropower test of the primary circuit carried out in 2016
  - Hot functional testing (i.e. operation with nominal pressure and temperature values)  
Increase in pressure and temperature of the primary circuit, reactor protections testing realised, internal structures vibration testing realised
  - Fuel delivery on site
  - Ongoing safety review by the Chinese safety authority in order to authorise fuel loading
- Unit 2
  - Continuation of electromechanical erection, end of secondary circuit assembly, realization of the modifications of the command control to bring it to the level of the unit 1

## Next steps

- Unit 1
  - End of hot functional testing and fuel loading
  - Start-up in the second half of 2017<sup>(1)</sup>
- Unit 2
  - End of electromechanical erection, system performance testing
  - Start-up in the first half of 2018<sup>(1)</sup>

(1) Source: CGN press release of 20 February 2017 ("Construction Progress of Taishan Nuclear Power Generating Units")

# UK NUCLEAR NEW BUILD: FIRST NUCLEAR SAFETY CONCRETE GOAL ACHIEVED AT HINKLEY POINT C

- ≡ EDF signed contracts with the UK Government and Chinese partner CGN in London on 29 September 2016, sealing the final investment decision taken by the EDF Board on 28 July 2016. EDF's share is 66.5% and CGN's 33.5%
- ≡ First Nuclear Safety Concrete achieved at end March 2017
- ≡ Currently 1,600 people working on site each day

## Update for Sizewell and Bradwell projects

- ≡ For Sizewell, EDF is reviewing feedback from the second stage consultation completed February 2017
- ≡ For Bradwell, the UK government confirmed on 10 January 2017 that the nuclear regulator has been asked to begin the GDA for the UK HPR1000 nuclear technology

# SHARE CAPITAL INCREASE WITH PREFERENTIAL SUBSCRIPTION RIGHTS: MAIN CHARACTERISTICS

## Principle of the Rights Issue

Share capital increase with preferential subscription rights

The allocation of a preferential subscription right, proposed in most share capital increases, **offers to existing shareholders the possibility to subscribe first** in order to keep their capital share

## Key features of the EDF Rights Issue

Amount	€4,018m (633 millions of new shares)
Subscription parity	3 new shares for 10 existing shares
Subscription price	€6.35 per new share
Discount	28.8% on the theoretical ex-rights price at the close the 3 <sup>rd</sup> March 2017

- 1 preferential subscription right for one existing share
- 10 preferential subscription rights allowed to subscribe 3 new shares at the price of €6.35 per new share

## Two types of subscription

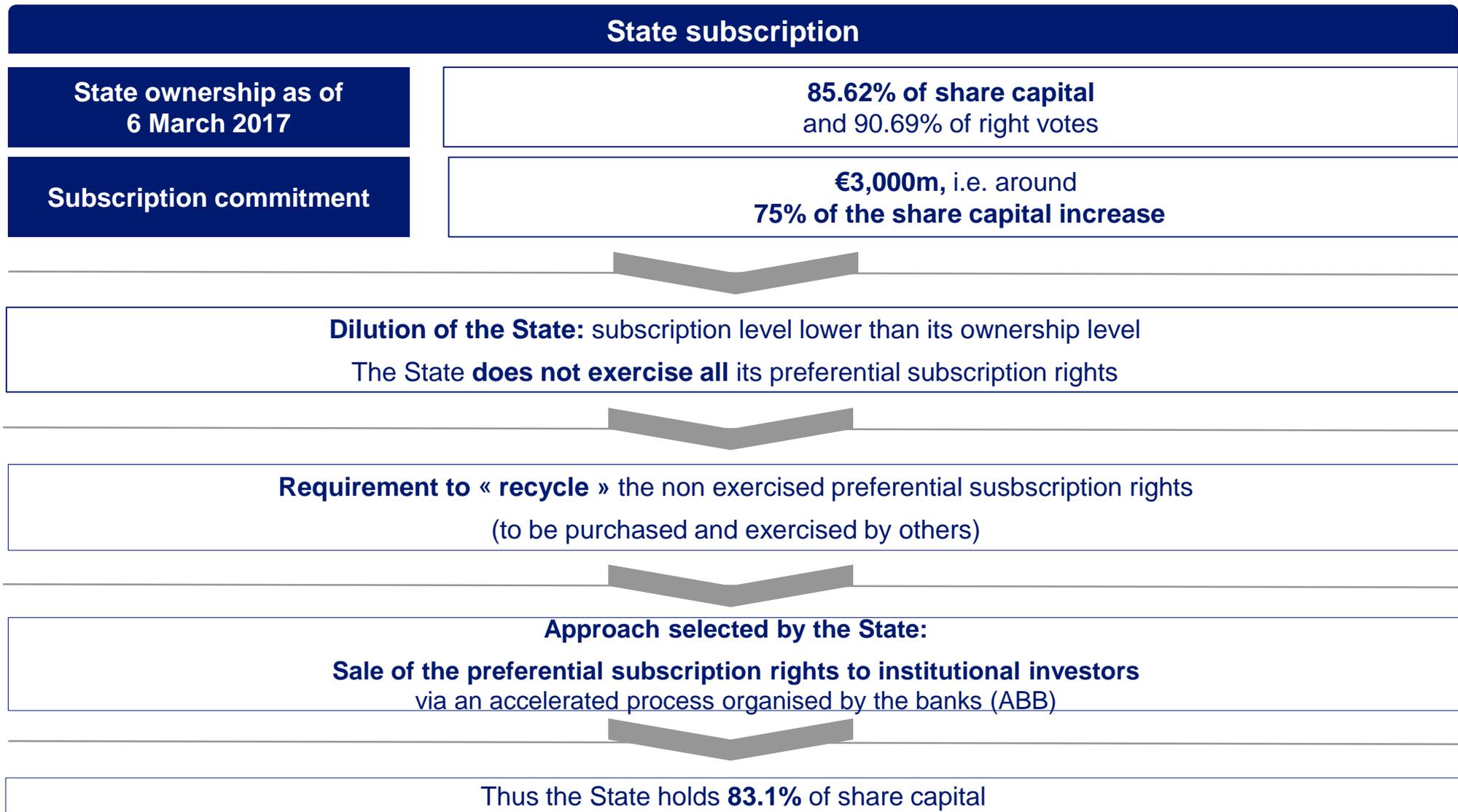
**An irreducible right to subscribe**

By exercising its preferential subscription rights, the existing shareholder has the priority to take part in the share capital increase, with the guarantee to get the requested new shares

**A reducible preferential right to subscribe**

In addition to an irreducible preferential right to subscribe, the shareholder can place a complementary order of new shares without any additional preferential subscription right but without any guarantee to get the number of requested new shares.

# SHARE CAPITAL INCREASE: FRENCH STATE SUBSCRIPTION AND MONETISATION OF PREFERENTIAL SUBSCRIPTION RIGHTS NOT EXERCISED



# SHARE CAPITAL INCREASE: OPERATION'S RESULTS

632,741,004 shares to be issued  
€4,018m

## Subscription on an irreducible basis

Rights exercised	2,080M
Subscribed shares	624M i.e. €3,964m
Granted shares	624M i.e. €3,964m
Rate subscription	98.7%

## Subscription on a reducible basis

Requested shares	146M i.e. €929m
Granted shares	8M i.e. €53m
Rate subscription	1.3%

Total Demand/ Rate subscription

€4,893m / 121.8%

Total market demand / Rate subscription

€1,893m / 185.9%



---

---

# SALES AND HIGHLIGHTS 2017

FIRST QUARTER

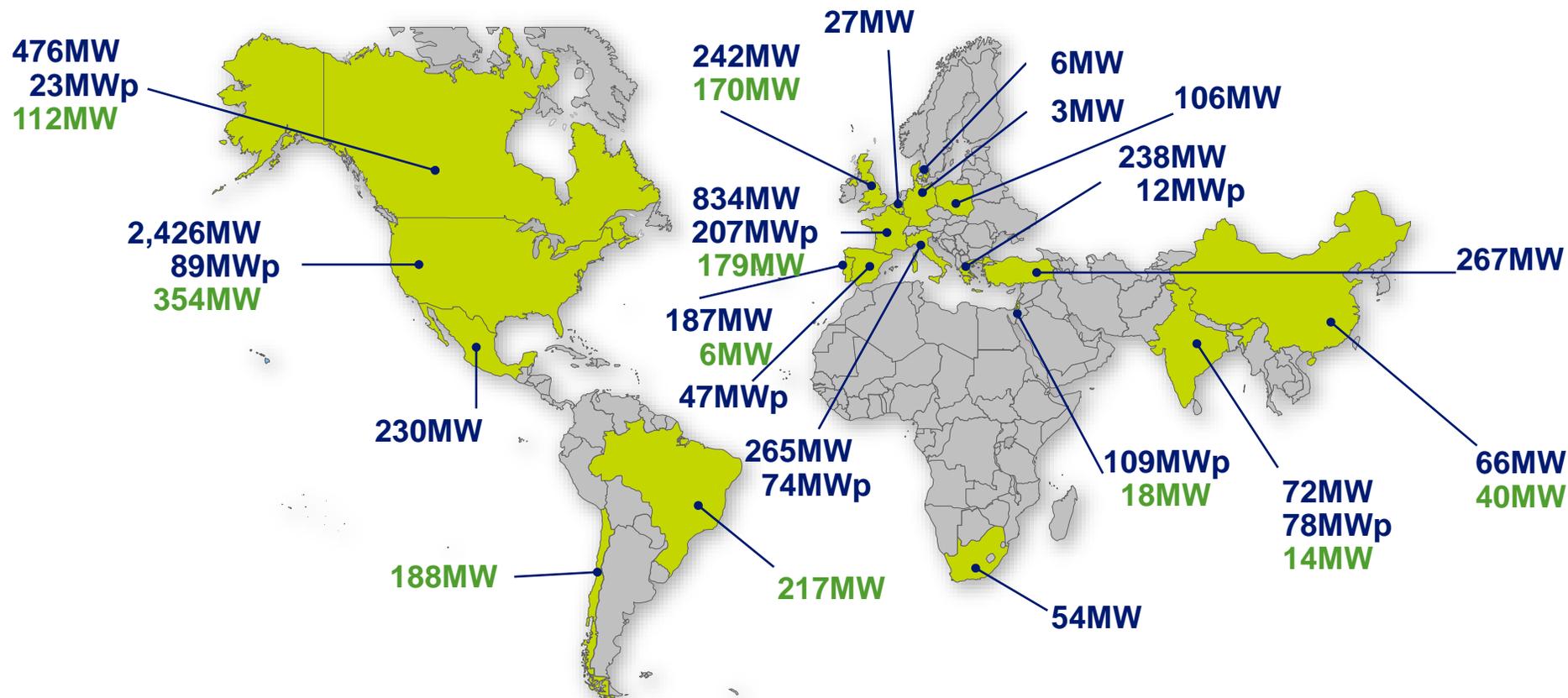
---

---

APPENDICES  
EDF ÉNERGIES NOUVELLES



# EDF EN: NET INSTALLED CAPACITY AS OF 31 MARCH 2017



Wind installed (MW)  
 Solar installed (MWp)  
 Wind and solar under construction (MW)

	Gross	Net
Installed capacity:	9,803MW	6,345MW
Capacity under construction:	1,845MW	1,297MW
<b>Total:</b>	<b>11,648MW</b>	<b>7,642MW</b>

**Other technologies**  
 Installed 208MW  
 Under construction 25MW

Source: EDF Énergies Nouvelles  
 Note: MWp: Megawatt peak (measure of the power under laboratory lighting and temperature conditions)

## EDF EN: INSTALLED CAPACITY AND CAPACITY UNDER CONSTRUCTION, BY TECHNOLOGY, AS OF 31 MARCH 2017

In MW	Gross <sup>(1)</sup>		Net <sup>(2)</sup>	
	31/12/2016	31/03/2017	31/12/2016	31/03/2017
Wind	8,495	8,613	5,434	5,498
Solar	900	972	621	639
Hydro	63	63	60	60
Biogas	70	70	70	70
Biomass	66	66	58	58
Cogeneration	-	-	-	-
Other	20	19	20	20
<b>Total installed capacity</b>	<b>9,614</b>	<b>9,803</b>	<b>6,263</b>	<b>6,345</b>
Wind under construction	1,221	1,269	873	968
Solar under construction	560	526	316	305
Other under construction	-	50	-	24
<b>Total capacity under construction</b>	<b>1,780</b>	<b>1,845</b>	<b>1,188</b>	<b>1,297</b>

(1) Gross capacity: total capacity of the facilities in which EDF Énergies Nouvelles has a stake

(2) Net capacity: capacity corresponding to EDF Énergies Nouvelles' stake



---

---

# SALES AND HIGHLIGHTS 2017

FIRST QUARTER

---

---

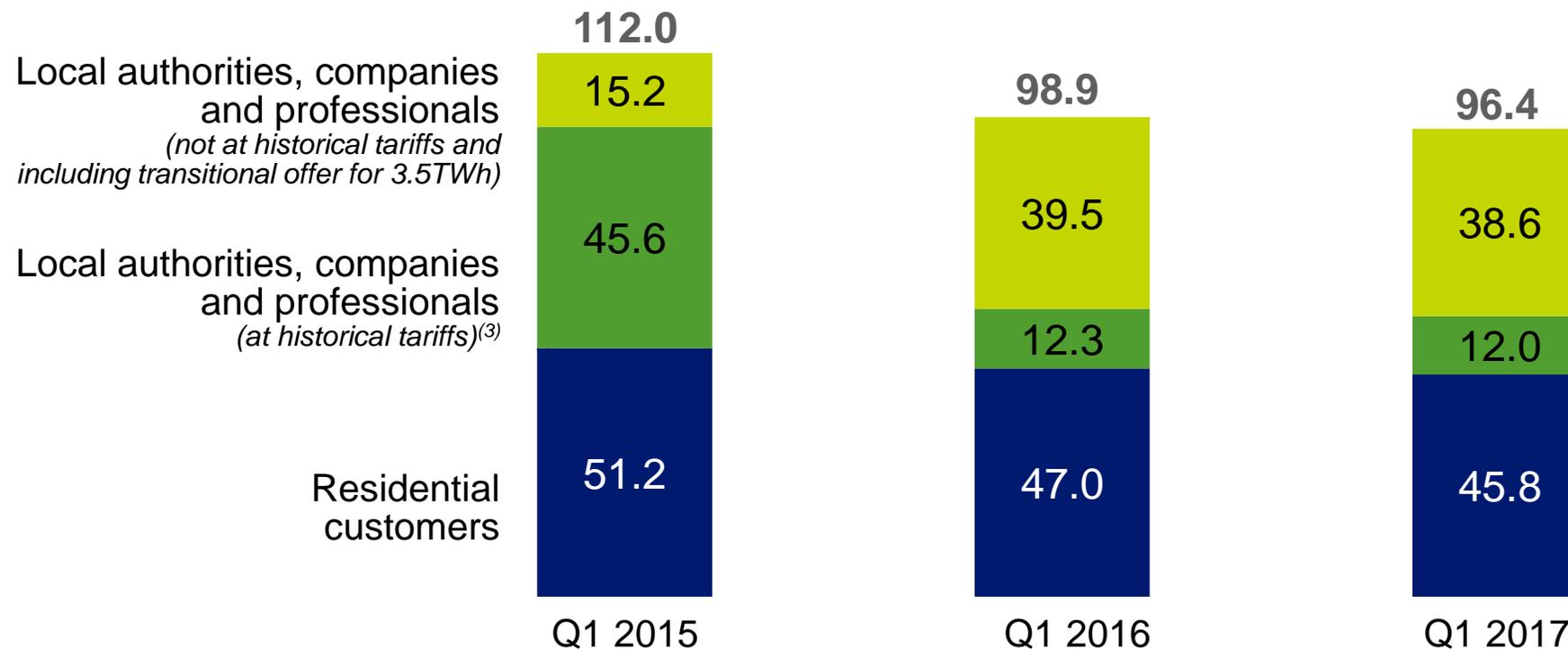
APPENDICES  
FRANCE



# ELECTRICITY BUSINESS OF EDF IN FRANCE

In TWh

Sales to end customers<sup>(1)(2)</sup>



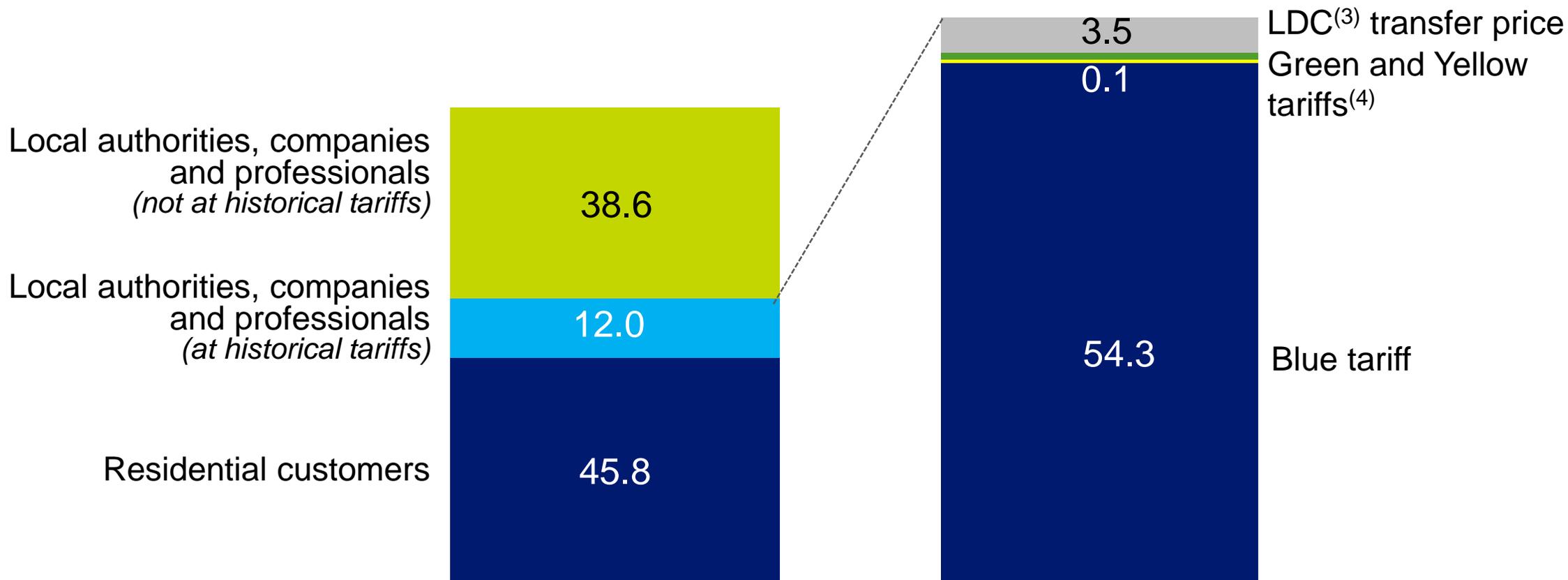
Decrease in portfolio volume at end-March 2017 vs. end-March 2016 of -2.5TWh

(1) Rounded to the nearest tenth  
 (2) Including EDF's own consumption  
 (3) Blue professional tariff, LDC (Local Distribution Companies) at transfer price and Yellow and Green tariffs, below 36kVA from 2016

# ELECTRICITY BUSINESS OF EDF IN FRANCE – HISTORICAL TARIFFS SPLIT BY COLOUR

In TWh

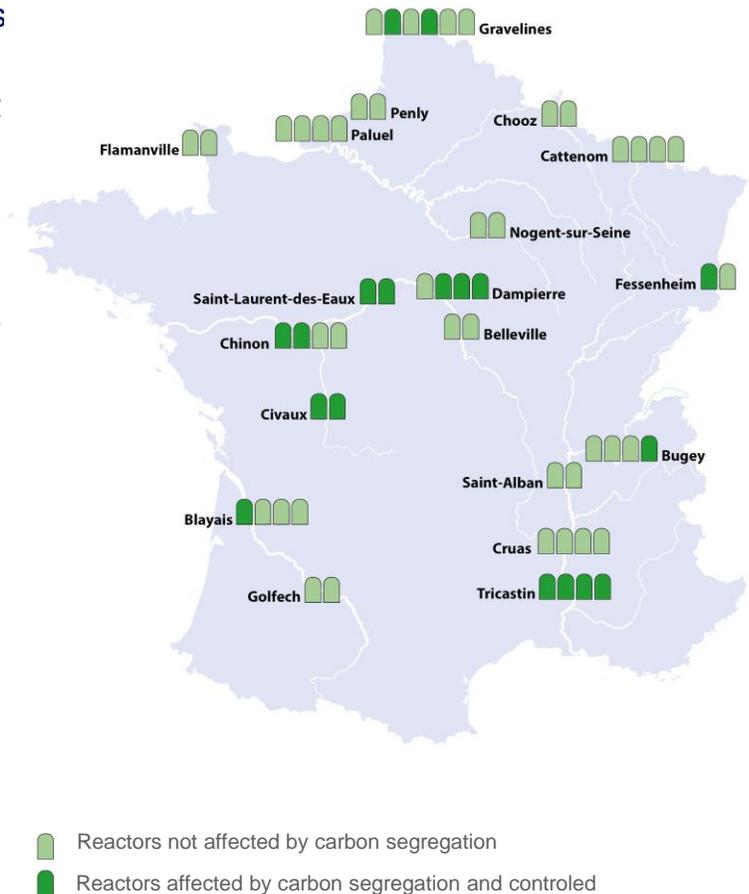
Sales to end customers for Q1 2017<sup>(1)(2)</sup>



(1) Rounded to the nearest tenth  
 (2) Including EDF's own consumption  
 (3) Local Distribution Companies (LDCs)  
 (4) Of which Yellow tariff for 0.03TWh and Green tariff for 0.07TWh - tariffs lower than 36kVA that persist beyond 2015

# FRENCH NUCLEAR FLEET: FULLY SAFE OPERATION OF THE STEAM GENERATORS CONFIRMED BY THE FRENCH NUCLEAR SAFETY AUTHORITY (ASN)

- ≡ When a higher-than-expected carbon concentration was discovered in some parts of the pressure vessel of the Flamanville EPR reactor (carbon segregation), EDF and AREVA conducted analyses to identify the risk of such a phenomenon on forged parts installed on the current nuclear fleet
- ≡ These analyses revealed that this risk could affect 46 steam generators manufactured by Creusot Forge and Japan Casting Forging Corporation, installed on 18 generation units
- ≡ The first measurements demonstrated the existence of margins allowing for the safe operation of the reactors
- ≡ To reinforce this safety demonstration, EDF carried out in-depth controls during the planned outages of the relevant reactors, which required the outages to be extended. These controls were of two types:
  - Tests using ultrasound to check for the absence of metallurgical defects
  - Measurements of surface carbon levels at different areas of the bottoms of each steam generator
- ≡ These inspections allowed the restart of the reactors equipped with steam generator bottoms made by Creusot Forge, or 6 generation units<sup>(1)</sup>
- ≡ On 7 October 2016, EDF submitted to the ASN a technical report supporting the fully safe operation of the steam generators manufactured by JCFC, which are used in ten 900MW reactors. This “generic” demonstration was approved by the ASN on 5 December 2016
- ≡ On 17 January 2017, the ASN issued a statement regarding the last two reactors of the 1,450MW fleet that were still to be controlled: the ASN approved the safety demonstration regarding the steam generators of Civaux 2
- ≡ As of 1<sup>st</sup> March 2017, the 18 reactors concerned by the issue of “carbon segregation” have been tested and granted approval to restart and are operating in complete safety



(1) Please refer to the press release published by EDF on 21 October 2016

# FRENCH NUCLEAR FLEET: QUALITY ASSURANCE ANOMALIES IN AREVA'S MANUFACTURING FILES

- AREVA's quality control audit has highlighted irregularities in parts of the manufacturing tracking records for the parts forged in the Creusot Forge factory, in regards to either manufacturing parameters or test results. The affected files had been marked at the time with one or two bars, hence the name "barred folders"
- Informed of the issue starting in April 2016**, EDF is closely monitoring AREVA's analysis of all records used for the identification and characterisation of the "barred" files for the parts intended for the French nuclear fleet. For each of these files, EDF is also carrying out its own independent analysis
- The French Nuclear Safety Authority is regularly informed of these analyses
- Mid-October 2016**, EDF informed the ASN that it has completed the characterisation of the "barred folders" relating to the reactors in operation and confirmed that the **88 identified irregularities have no impact on the safety of reactors in question**
- Regarding the Fessenheim 2 reactor, the noted irregularity involves the forging file for the lower part of a steam generator. In order to undertake additional investigations, EDF shut down this reactor on 13 June 2016 in advance of its planned outage. AREVA submitted to the ASN, and started in September, a programme of additional tests on the steam generator. The results, transmitted by AREVA to the ASN on 6 January 2017, confirm the integrity of the steam generator and its ability to operate safely. The issue is currently being investigated by the ASN
- Beyond the "barred folders", AREVA has launched an analysis programme on around 9,000 manufacturing records, including 1,600 manufacturing records of components used in the currently operating fleet
- One of these irregularities concerns the manufacturing file of a new steam generator, not yet installed and initially intended for Gravelines reactor 5. The reactor, shut down since 9 April 2016 for its 3<sup>rd</sup> ten-year inspection, will be able to operate in all safety with original steam generators after a procedure which has been approved by the Nuclear Safety Authority

## CAPACITY MARKET IN 2017 AND IMPACT FOR EDF

- ≡ First capacity auction 2017 organised by EPEX Spot on 15 December 2016
  - 22.6GW of capacity certificates traded
  - Price of capacity: €10/kW (reference price for 2017)
    - On 27 April 2017, a 2<sup>nd</sup> capacity auction for remaining 2017 volumes cleared at €10.4/kW
- ≡ EDF certified 76GW capacity for 2017
  - EDF, both a capacity-holding operator and a entity subject to capacity obligations as supplier, holds a positive net position which it can sell on the market
- ≡ Financial impact for EDF
  - Only part of the certified capacity value can be recovered
    - ARENH volumes subscribed by alternative suppliers or included in EDF's supply offers including Blue tariffs, Exeltium, LCD<sup>(1)</sup> tariffs, are delivered with certificates of capacity
  - 2017 EBITDA impact will be linked to the timing of the capacity cost pass-through to the different categories of end-customers, in principle in 2017. The pass-through of capacity costs in regulated tariffs should take place as part of the next tariff movement, as its principle was enacted by the CRE's decision of 13 July 2016

(1) Local Distribution Companies (LDCs)

# LINKY<sup>(1)</sup> SMART METERS DEPLOYMENT

## ≡ The project

- Roll-out since the end of 2015 with a goal of 34 millions meters (ie 90% of the fleet) installed by 2021
- Investment amount estimated at €4.5bn over the deployment period 2014-2021
- Economic equilibrium based on gains made possible by the Linky project (reduction of non technical losses, reduction in the number of technical and meter-reading, optimization of network management, MDE<sup>(2)</sup> gains, etc.)

## ≡ The tariff framework of the project<sup>(3)</sup>

- Specific regulation over a 20-year period (Linky-dedicated RAB)
- Pre-tax nominal return rate of 7.25% and 3% additional premium with penalties in return for an incentive regulation relative to the respect of the costs and the deadlines and the performance of the system (the penalties may not lead to a total pre-tax nominal compensation rate of less than 5.25% )
- Application of a tariff difference on Linky revenues until 2021, accompanied by a compensation for the costs of financial carry, and totally cleared by 2030

## ≡ Roll-out at end March 2017

- Since the first pilots and the start of the general roll-out on 1<sup>st</sup> December 2015, the installation is continuing, in line with the projected progress and cost path
- At end of March 2017, around 3.65 million clients are equipped with installed meters, and nearly 60,000 concentrators were installed in the substations. The deployment started in about 2,150 towns, in all regions of France
- The rhythm of installation of the Linky meters has risen from less than 3,000 meters/day in early 2016 to around 17,000 meters/day at end of March 2017, in line with the increase in the number of installers and the expected installation rate

(1) Linky is a project of Enedis, independant subsidiary of EDF under the provisions of the French Energy Code

(2) MDE: Demand-side management

(3) CRE's ruling of 17 July 2014

## TURPE 5 HTA/BT (DISTRIBUTION): KEY FEATURES

- ≡ TURPE 5 HTA/BT largely takes up the main principles of TURPE 4 HTA/BT:
  - Remuneration of the Regulated Asset Basis (2.6% from a €51bn grid RAB and 10.25% from a €1.6bn<sup>(1)</sup> Linky RAB)
  - Remuneration of Regulated Equity (4.1% from €5.8bn<sup>(1)</sup>)
  - Coverage of the amortisation trajectory (on the basis of an Enedis proposal, €2.5bn except Linky and €0.16bn Linky<sup>(1)</sup>)
  - “System” OPEX: coverage of system services and energy purchases, incentive on losses
  - Incentive on business OPEX, mainly personnel expenses and procurement costs
- ≡ The CRE reinforced the incentive regulation mechanisms (quality of supply, level of requirements in terms of quality of services, performance of the controllable OPEX, incentive on losses)
- ≡ After the increase of 2.71%<sup>(2)</sup> on 1<sup>st</sup> August 2017, the tariffs will be adjusted every year starting 2018, on 1<sup>st</sup> August, according to the formula  $CPI + K$ :
  - $CPI$  = Consumer Price Index for all France, excluding tobacco, in year N-1
  - $K$  = annual clearance term of the CRCP (within a limit of +/-2%; the uncleared amounts, where applicable, being pending appeal to the following years)

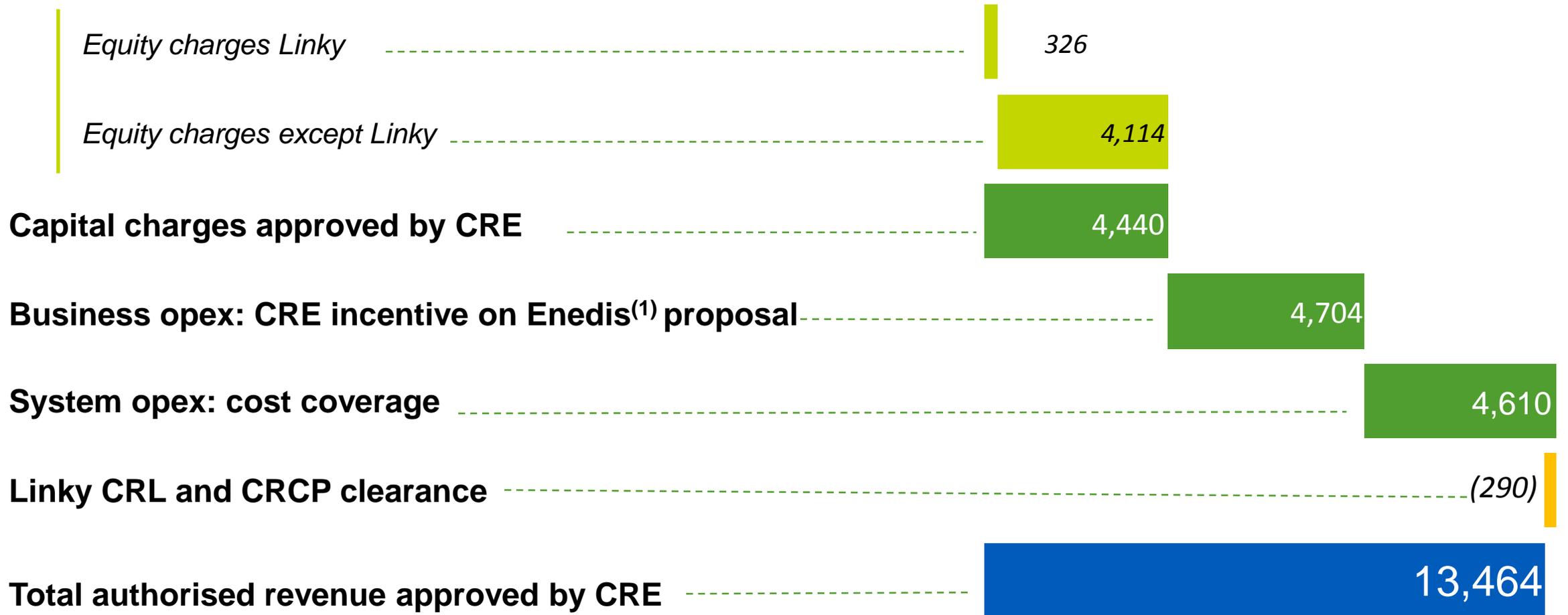
Source: Commission de Régulation de l'Énergie. Chiffres moyens sur 2017-2020

(1) Planned average figures for the TURPE 5 tariff period (2017-2020)

(2) Four actions for annulment were filed against the decision on the TURPE HTA-BT with the State Council by Enedis, EDF, the Minister for Energy and the trade union CFE-Energies

# TURPE 5 HTA/BT (DISTRIBUTION): TOTAL AUTHORISED REVENUE

In millions of euros



Source: Commission de Régulation de l'Énergie. Chiffres moyens sur 2017-2020  
 (1) Enedis, independent subsidiary of EDF under the provisions of the French Energy Code

# ENERGY TRANSITION LAW FOR GREEN GROWTH FROM THE PPE<sup>(1)</sup> TO EDF'S STRATEGIC PLAN



## Strategic Plan (PSE)

- Obligation imposed on EDF as a producer of more than one third of national electricity output
- Proposes changes in generation facilities to meet the objectives of the first period of the PPE
- Submitted to the Energy Minister within six months of the approval of the PPE
- The Minister verifies the compatibility of the Strategic Plan with the PPE, if incompatibilities exist, obligation to draft a new Strategic Plan
- Obligation for EDF to report annually on the implementation of the PSE strategic plan to Parliament

## Government Commissioner's right to veto

- The Government Commissioner has the right to oppose any investment decision incompatible with the objectives of the Strategic Plan or with the PPE in the absence of a Strategic Plan
- If the Government Commissioner's opposition is validated by the Minister of Energy, no investment decision without revision of the Strategic Plan

(1) PPE: *Programmation Pluriannuelle de l'État*

(2) Please refer to the press release published by EDF on 6 April 2017

# PROJECT TO EXTEND HYDROPOWER CONCESSIONS

- ≡ The French State has the option to extend certain current hydropower concessions in exchange for the realisation, by the existing concessionaire, of additional investment needed to achieve energy policy objectives<sup>(1)</sup>
- ≡ The State notified to the European Commission (General Division Growth - "GROW") on 12 April 2017 a project for the extension of the concessions of the Truyère and Lot valleys in return for investments. These concessions, currently operated by EDF, provide:
  - the best opportunity for a **rapid increase in hydroelectric generation capacity in France**, and
  - the **possibility of creating a STEP** (pumped storage plant) enabling the mass storage of electrical energy necessary for the development of intermittent renewable energy sources

This extension would therefore address security of supply requirements by 2025-2030 by increasing the flexibility of the existing fleet

- ≡ Two-stage review of the extension project by the European Commission services
  1. General Division GROW: review under concessions law
  2. General Division Competition - "COMP": review under European competition law, with respect to State aid rules and within the framework of the 22 October 2015 formal notice by DG COMP<sup>(2)</sup>

(1) A provision of the law No. 2015-992 of 17 August 2015 relating to the Energy Transition for Green Growth ("Loi TECV")

(2) The notification of this project does not suspend the formal notice procedure under Article 106/102 TFUE



---

---

# SALES AND HIGHLIGHTS 2017

FIRST QUARTER

---

---

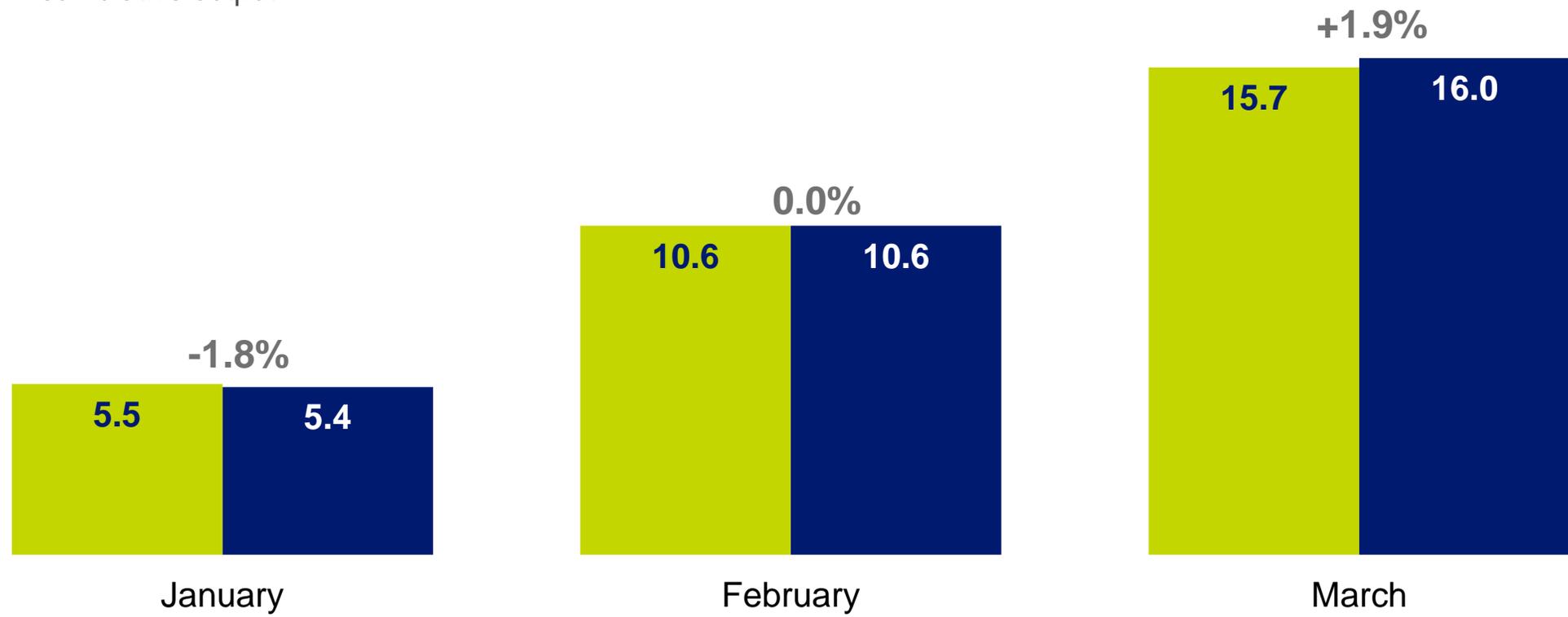
APPENDICES  
INTERNATIONAL AND OTHER  
ACTIVITIES



# UNITED KINGDOM: QUARTERLY NUCLEAR OUTPUT VS. Q1 2016

In TWh

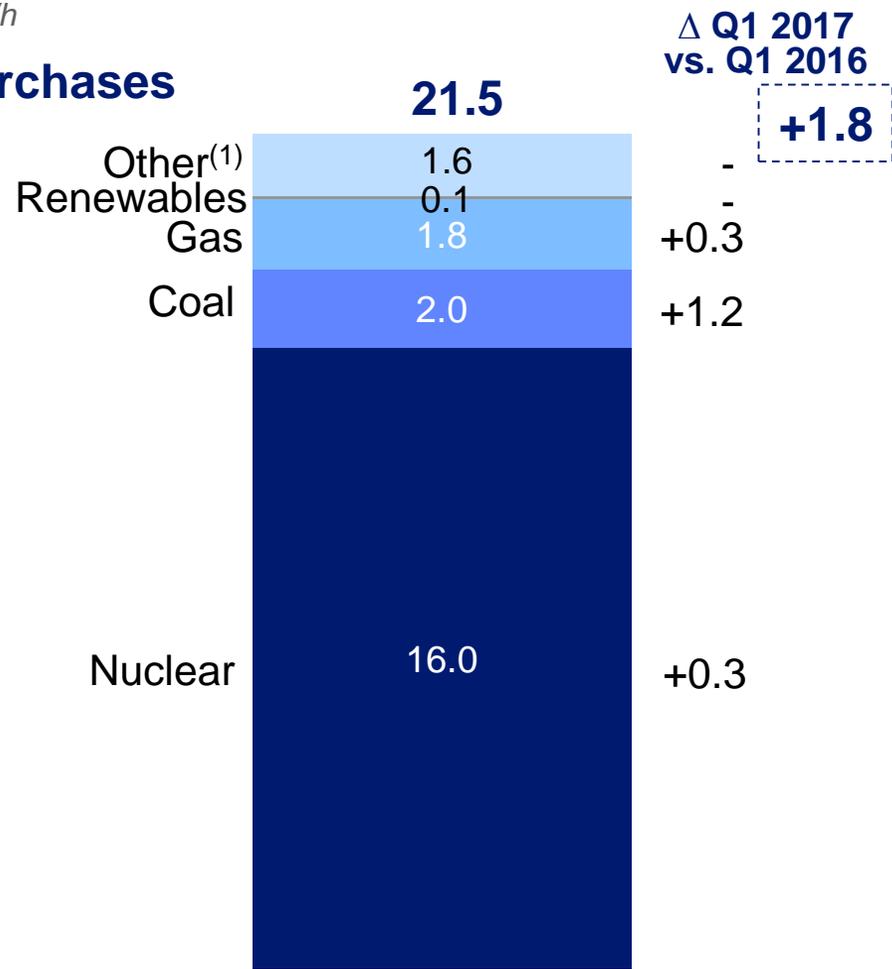
2016 cumulative output  
2017 cumulative output



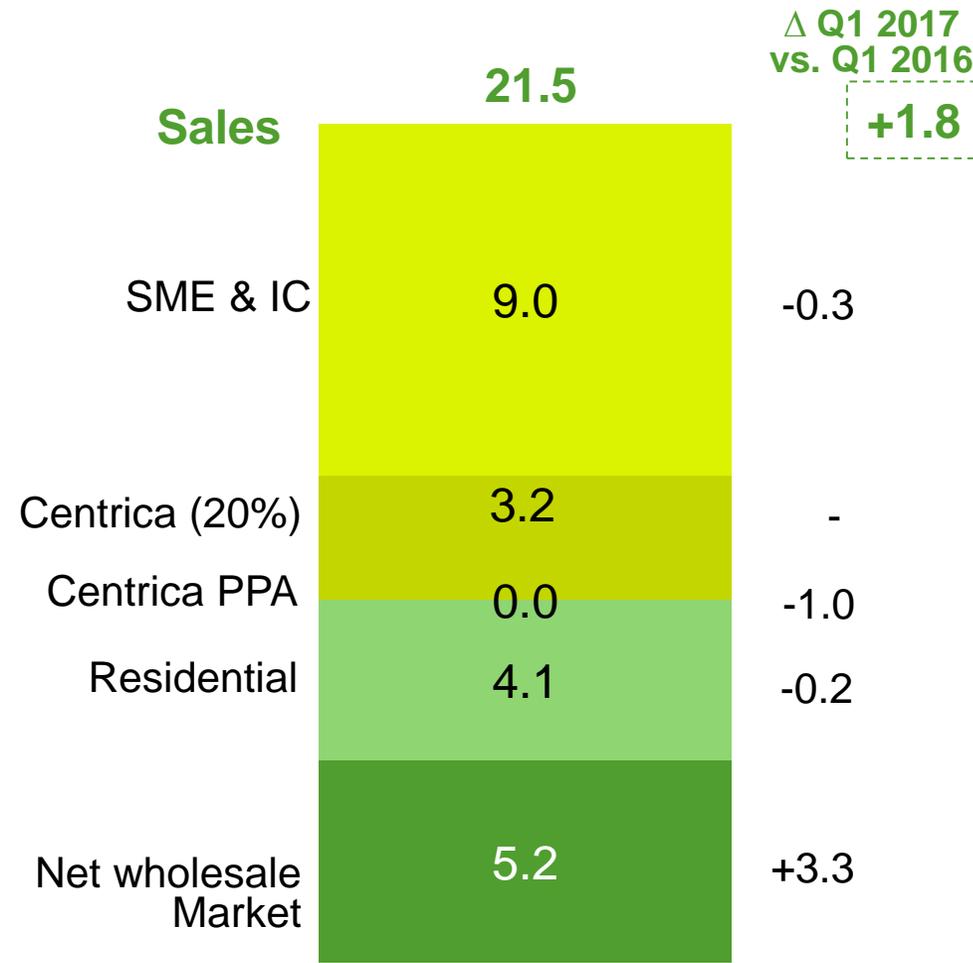
# UNITED KINGDOM: UPSTREAM/DOWNSTREAM ELECTRICITY BALANCE

In TWh

## Output/Purchases

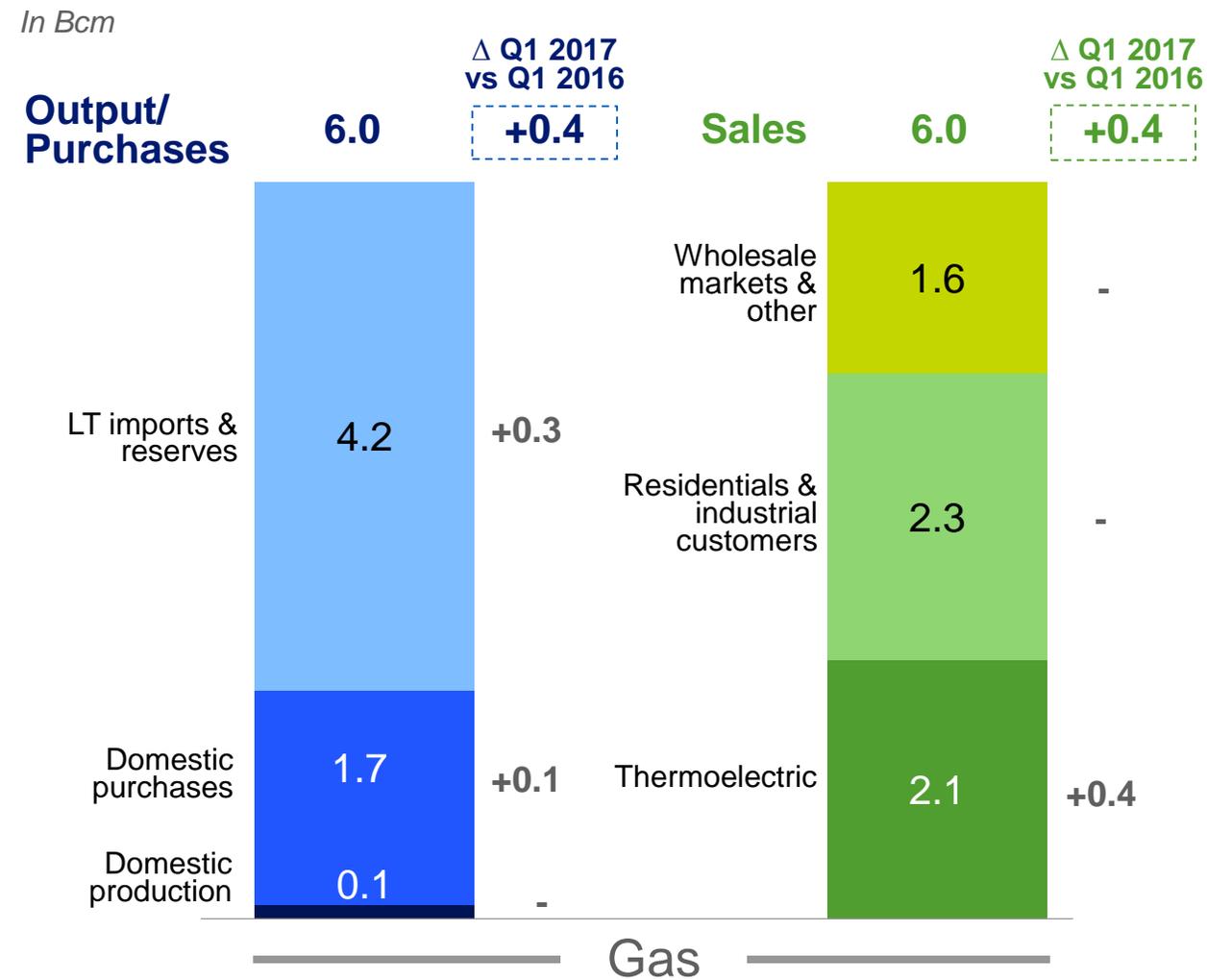
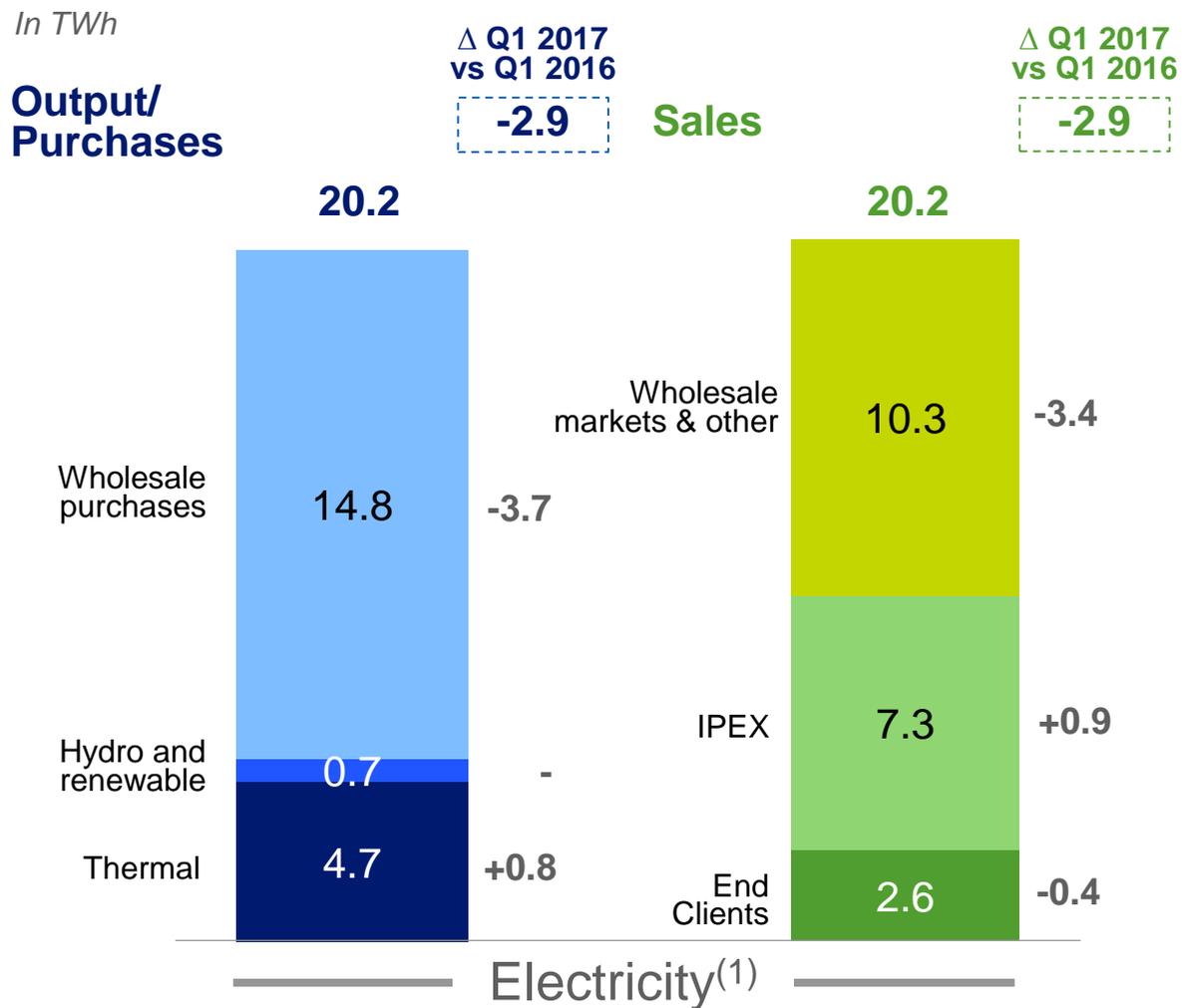


## Sales



(1) Including wind output and purchase obligations

# EDISON: UPSTREAM/DOWNSTREAM ELECTRICITY AND GAS BALANCES



(1) Excluding trading volumes



---

---

# SALES AND HIGHLIGHTS 2017

FIRST QUARTER

---

---

APPENDICES  
MARKETS

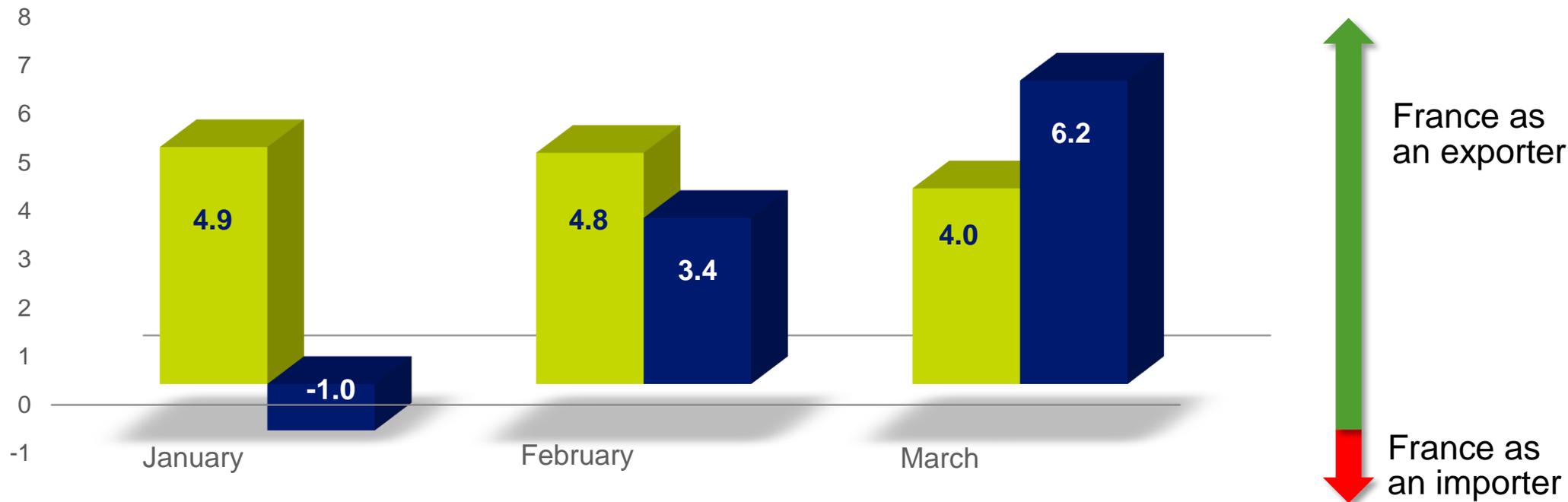




# MONTHLY CROSS-BORDER ELECTRICITY TRADE BALANCE

In TWh

2016  
2017



French cross-border electricity trade balance stood at 8.7TWh for Q1 2017, recording a decrease of 5.0TWh compared to Q1 2016. Exports contracted by 3.5TWh, especially in January. Imports increased by 1.4TWh, in particular in January. The balance to the CWE<sup>(1)</sup> zone was positive at 3.1TWh, around the same level as of 1<sup>st</sup> quarter 2016. On the quarter, however France remains a net exporter to Switzerland, Italy, Spain and the United Kingdom. A particularly high export balance was reached at the end of March 2017, with an export record of 17.9GW on 30 March at 6pm

Source: RTE

(1) CWE flow-based coupling zone composed of Germany, Belgium, France, Luxembourg and the Netherlands, set up in May 2015

# FRENCH POWER TRADE BALANCES AT ITS BORDERS

In TWh <sup>(1)</sup>		Q1 2016				Q1 2017			
		January	February	March	Total	January	February	March	Total
<b>CWE<sup>(2)</sup></b>	exports	0.7	0.6	0.5	<b>1.8</b>	0.3	0.3	0.9	<b>1.6</b>
	imports	1.7	1.6	1.6	<b>4.9</b>	1.7	1.4	1.5	<b>4.7</b>
	balance	-1.0	-1.0	-1.1	<b>-3.1</b>	-1.5	-1.1	-0.6	<b>-3.1</b>
<b>United Kingdom</b>	exports	1.4	1.4	1.5	<b>4.3</b>	0.1	0.6	1.4	<b>2.1</b>
	imports	0.2	-	-	<b>0.3</b>	0.6	0.2	0.1	<b>0.8</b>
	balance	1.1	1.3	1.5	<b>3.9</b>	-0.4	0.4	1.3	<b>1.3</b>
<b>Spain</b>	exports	1.0	1.0	0.8	<b>2.8</b>	0.7	1.1	2.0	<b>3.7</b>
	imports	0.6	0.6	0.5	<b>1.7</b>	1.0	0.7	0.3	<b>2.0</b>
	balance	0.4	0.4	0.3	<b>1.1</b>	-0.3	0.4	1.7	<b>1.8</b>
<b>Italy</b>	exports	2.1	2.1	1.9	<b>6.1</b>	1.0	1.8	2.0	<b>4.9</b>
	imports	-	-	-	<b>-</b>	0.3	-	-	<b>0.3</b>
	balance	2.1	2.1	1.9	<b>6.1</b>	0.7	1.8	2.0	<b>4.6</b>
<b>Switzerland</b>	exports	2.4	2.2	1.9	<b>6.6</b>	1.3	2.1	2.2	<b>5.7</b>
	imports	0.2	0.2	0.4	<b>0.8</b>	0.8	0.2	0.4	<b>1.4</b>
	balance	2.2	2.0	1.5	<b>5.7</b>	0.6	1.9	1.8	<b>4.2</b>
<b>TOTAL</b>	exports	7.6	7.2	6.7	<b>21.5</b>	3.4	6.0	8.6	<b>18.0</b>
	imports	2.7	2.5	2.6	<b>7.8</b>	4.4	2.5	2.3	<b>9.3</b>
	balance	4.9	4.8	4.0	<b>13.7</b>	-1.0	3.4	6.2	<b>8.7</b>

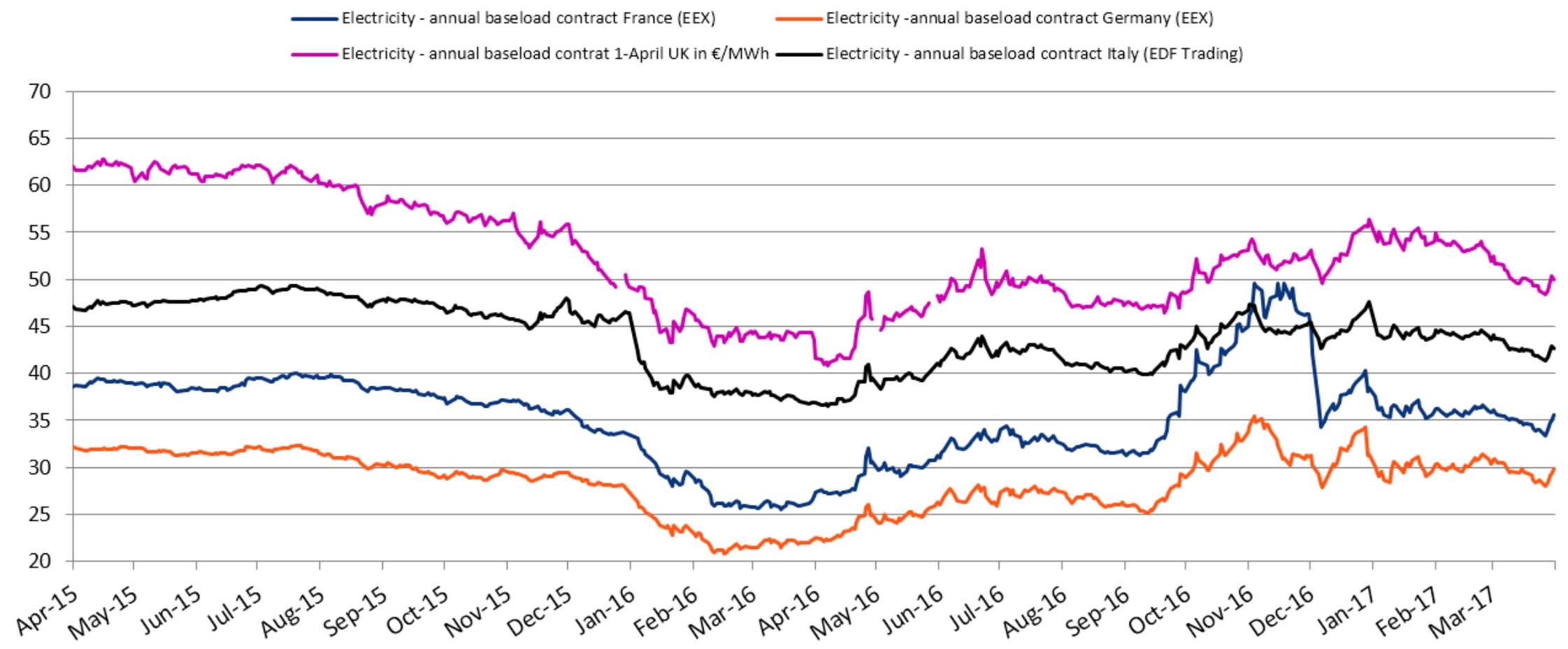
Source: RTE

1) Rounded to the nearest tenth

2) CWE flow-based coupling zone composed of Germany, Belgium, France, Luxembourg and the Netherlands, set up in May 2015

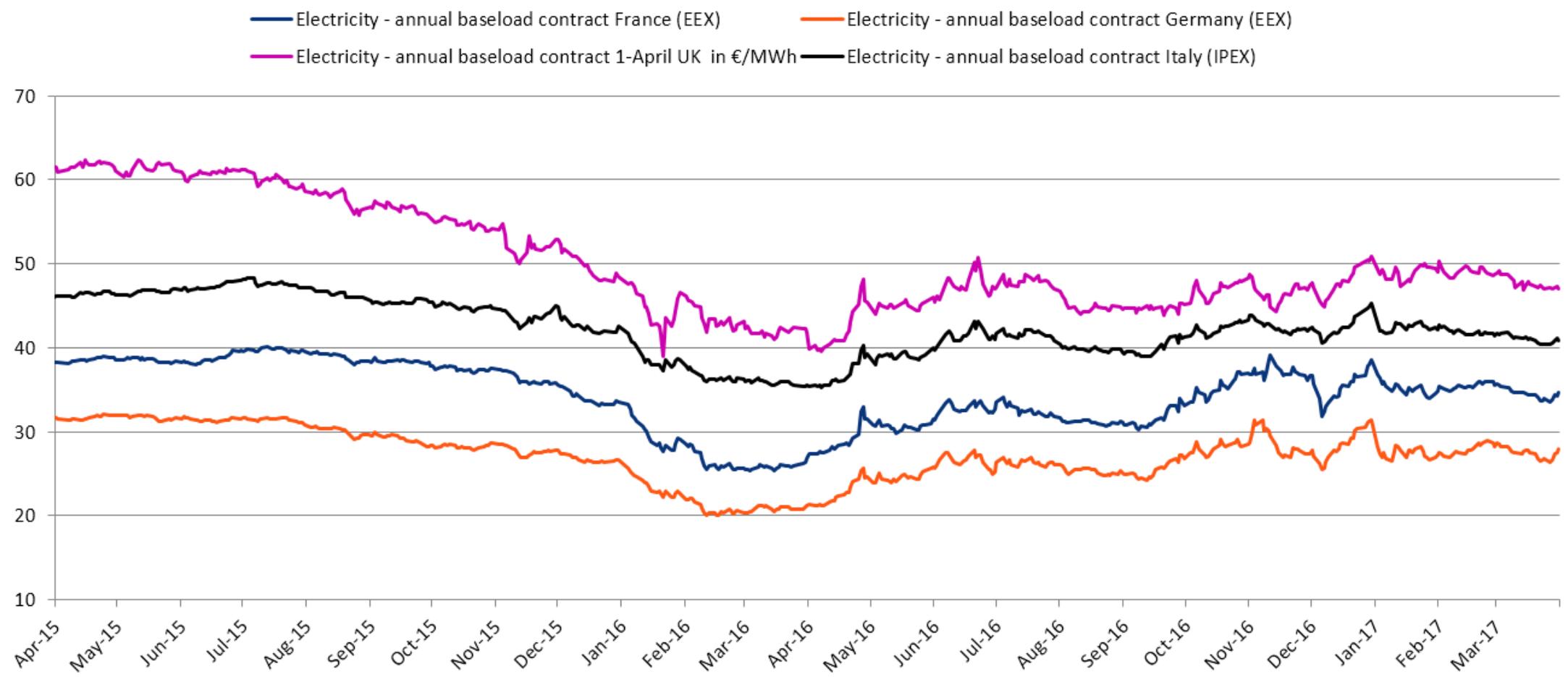
# FORWARD ELECTRICITY PRICES IN FRANCE, THE UK, ITALY AND GERMANY (Y+1) FROM 01/04/2015 TO 31/03/2017

In €/MWh



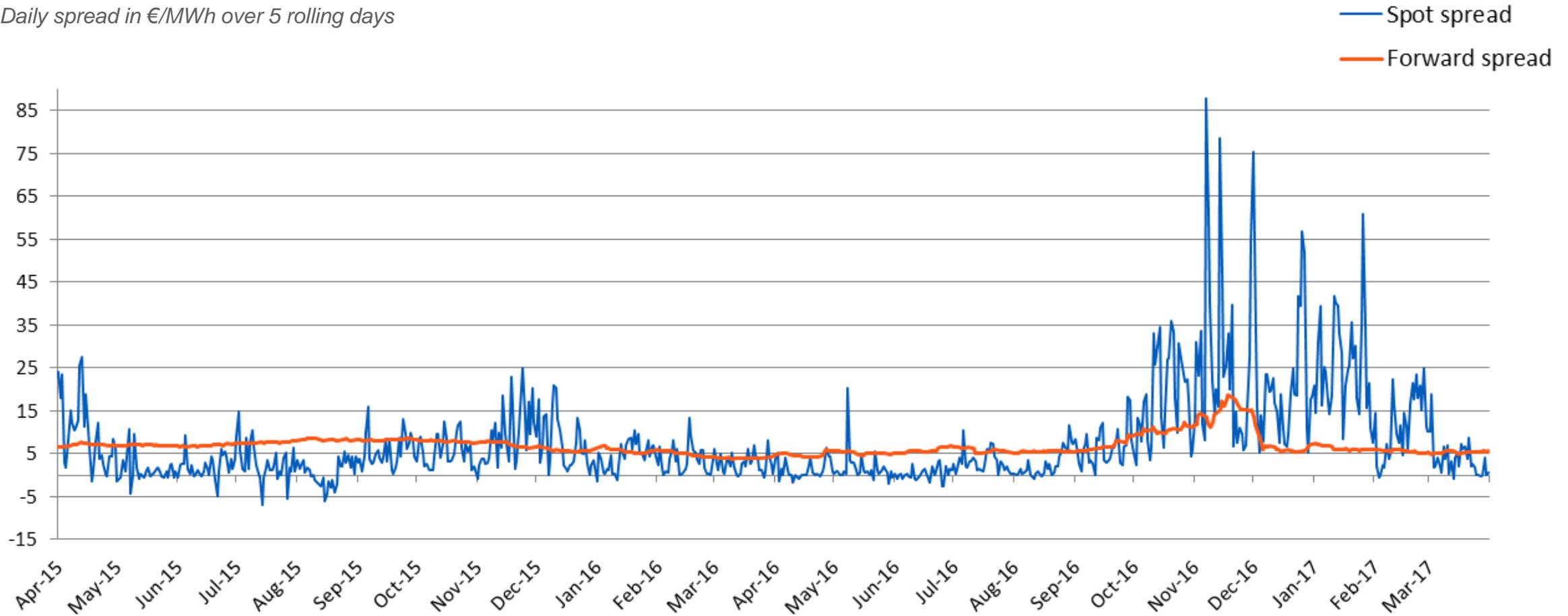
# FORWARD ELECTRICITY PRICES IN FRANCE, THE UK, ITALY AND GERMANY (Y+2) FROM 01/04/2015 TO 31/03/2017

In €/MWh



# FRANCE/GERMANY SPREAD FROM 01/04/2015 TO 31/03/2017

Daily spread in €/MWh over 5 rolling days

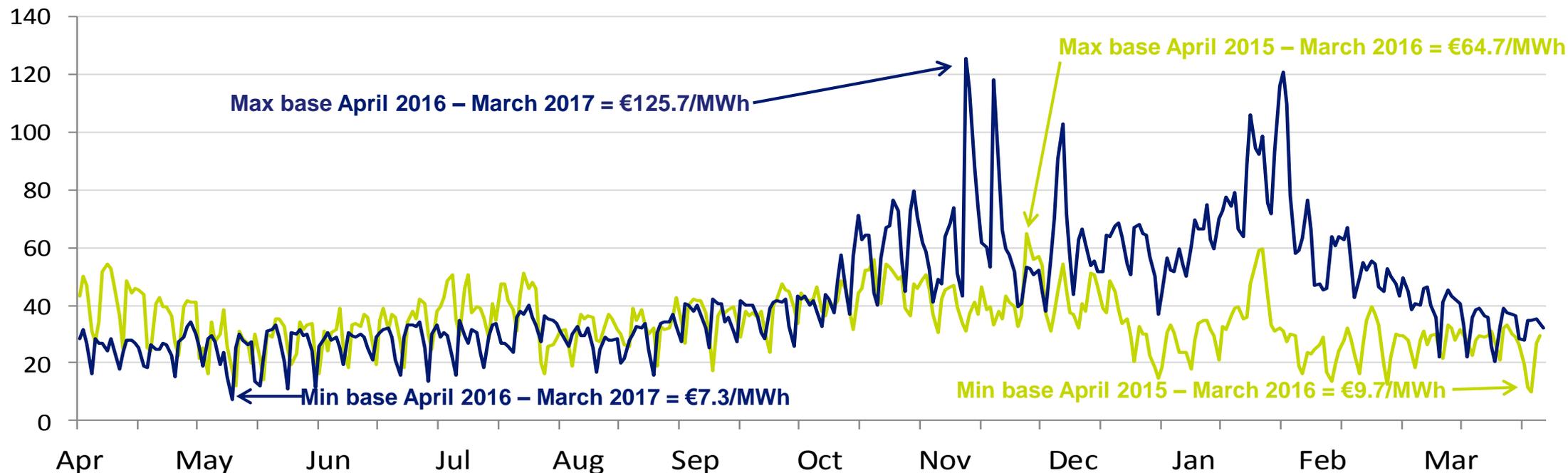


# FRANCE: BASELOAD ELECTRICITY SPOT PRICES

Daily average in €/MWh

— April 2015 - March 2016

— April 2016 - March 2017



In the 1<sup>st</sup> quarter of 2017, baseload spot prices stood at €55.0/MWh on average, up €26.2/MWh (+91%) compared to 1<sup>st</sup> quarter 2016. This level had not been reached since 2012. The increase is mainly due to high prices in January (€78.0/MWh on average) caused by a cold spell in Europe, and to the recovery of commodities prices compared to 2016

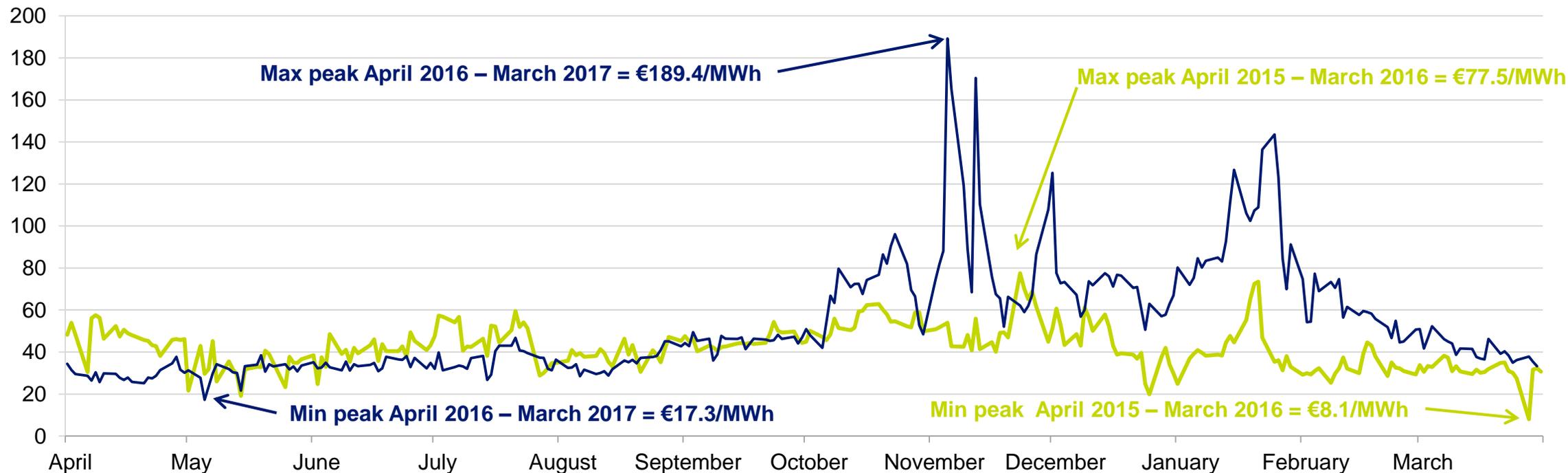
Source: EPEX

# FRANCE: PEAKLOAD ELECTRICITY SPOT PRICES

Daily average in €/MWh

— April 2015 – March 2016

— April 2016 – March 2017



In the 1<sup>st</sup> quarter of 2017, peak electricity spot prices stood at €65.6/MWh, up to €29.8/MWh (+83%). This increase is mainly due to high prices in January (€96.1/MWh on average), and the recovery of commodities prices compared to 2016

Source : EPEX

# COAL PRICES (Y+1) FROM 01/04/2016 TO 31/03/2017



Coal prices for delivery Y+1 in Europe stood at \$65.8/t in the first quarter of 2017, up 67% (+\$26.4/t) from the 1<sup>st</sup> quarter of 2016. After a steady increase since early 2016, the price has stabilised at around \$65/t since December 2016. This increase is due to the increase in oil prices, which makes coal extraction more expensive, and to China's desire (50% of world output and consumption) to reduce production. The price of coal for delivery in Europe in 2018 closed the quarter at \$65.7/t

# BRENT PRICES<sup>(1)</sup> FROM 01/04/2016 TO 31/03/2017

In \$/bbl

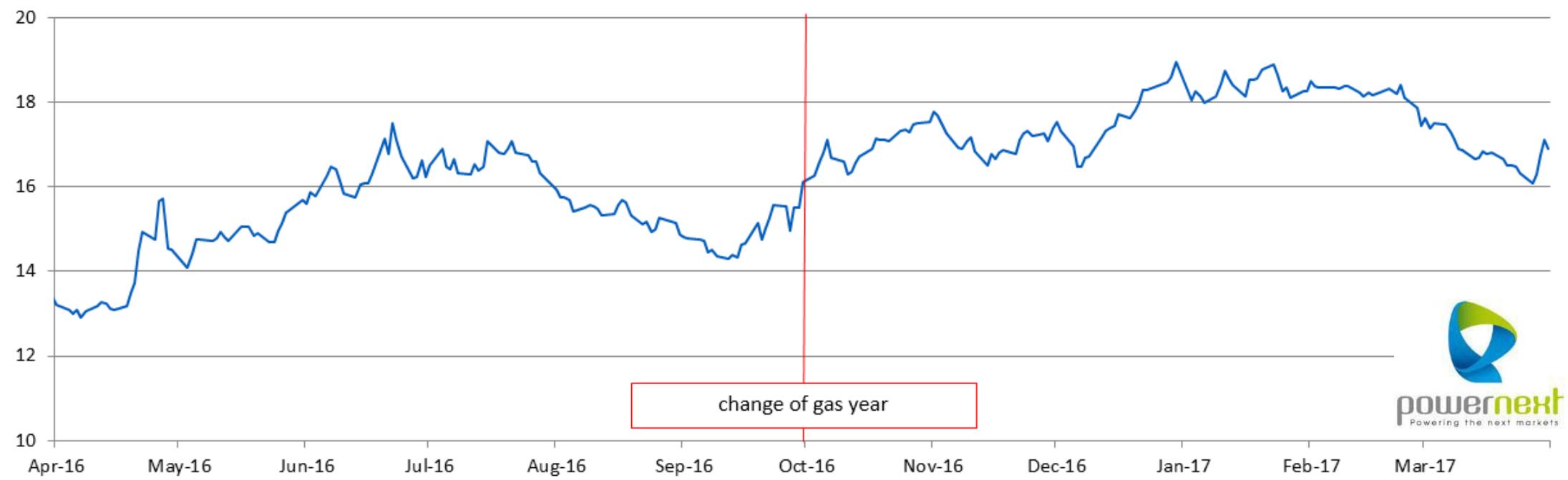


Oil prices averaged \$54.6/bbl, up 55% (+\$19.4/bbl) from the 1<sup>st</sup> quarter of 2016. In early 2016, excess supply on the market had led to a historically low price level. Prices have evolved following discussions among OPEC countries and Russia, which led to the Vienna agreement in November 2016 to limit generation and reduce overcapacity. The price however declined by nearly 7% in the 1<sup>st</sup> quarter of 2017. This was due to the rise in US oil stocks and to the tenuous nature of the Vienna agreement. The price of oil ended the month at \$52.8/bbl

(1) Brent spot price (M+1)

# GAS PRICES<sup>(1)</sup> (Y+1) FROM 01/04/2016 TO 31/03/2017

In €/MWh



In the 1<sup>st</sup> quarter of 2017, the annual gas contract on the French PEG Nord hub averaged €17.8/MWh, up 26% (+€3.7/MWh) compared with the 1<sup>st</sup> quarter of 2016. This increase was due to the upturn in oil prices and to a mild winter in 2016, during which the withdrawal from stocks was limited.

In January and February 2017, prices were relatively stable at around €18.5/MWh. The trend was downward in March, as with oil prices. The GY2018 PEG Nord contract ended the month at €16.9/MWh

(1) Price of France PEG Nord gas

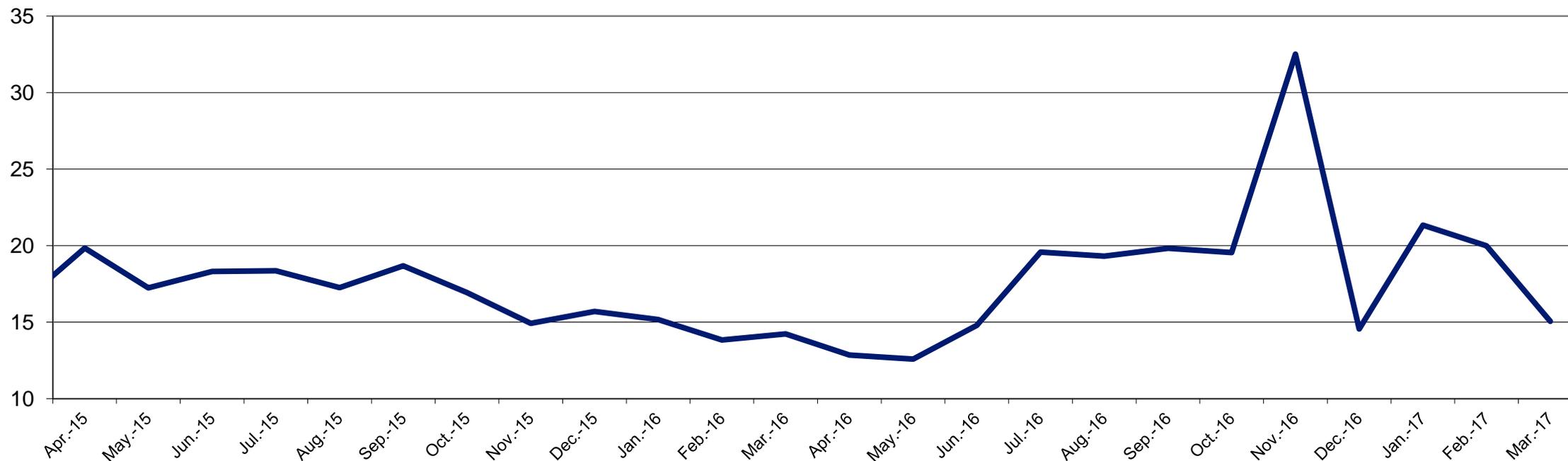
# CO<sub>2</sub> PRICES (Y+1) FROM 01/04/2016 TO 31/03/2017



The price of the CO<sub>2</sub> emission certificate for delivery in December 2018 was €4.7/t at end March 2017, down €0.5/t compared with the end of the 1<sup>st</sup> quarter of 2016

# CLEAN DARK SPREAD<sup>(1)</sup> IN THE UK (DAY AHEAD)

In £/MWh



Market spread =

- + Electricity price
- API 2 Price x market estimate of the coal volume / MWh of electricity
- (EUA price + Governmental tax price) x market estimate of carbon emissions / MWh of electricity

(1) Spread of a coal-fired plant running at full capacity, including the cost of coal and CO2 emissions (excluding green certificates), assuming the market is efficient

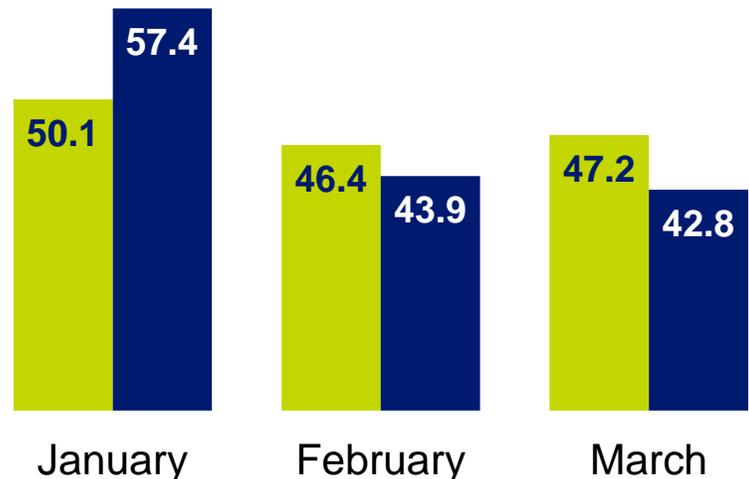
# FRANCE: ELECTRICITY AND GAS CONSUMPTION

In TWh

### Electricity<sup>(1)</sup>

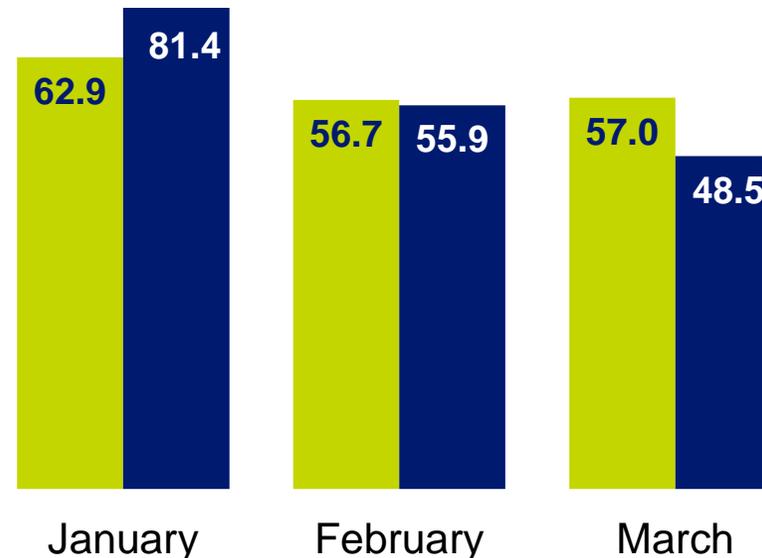
2016

2017



In TWh PCS

### Gas<sup>(2)</sup>



Gross electricity consumption amounted to 144.1TWh over the quarter, relatively stable compared to 2016. Consumption in January increased by 14.5%, due to a significant cold spell, whereas consumption in March dropped by nearly 9.4%, due to particularly mild weather. Adjusted for weather effects and the leap year, first-quarter consumption in 2017 increased slightly (+0.8%) compared to the 1<sup>st</sup> quarter of 2016

Demand for gas in France increased by more than 5% in the 1<sup>st</sup> quarter of 2017 compared to the 1<sup>st</sup> quarter of 2016, to 186TWh. It was mainly driven by the rise in consumption in January (+30% compared to January 2016) due to a decrease in temperatures by 3.8°C

(1) Source 2016 and 2017: RTE, March 2017 Monthly Overview (provisional data)

(2) Source: Base Pégase, Direction générale de l'énergie et de matières premières (DGEMP), Ministry of Ecology, development and Sea  
February and March 2017: Smart GRT gaz publications and TIGF publications

# UNITED KINGDOM: GAS AND ELECTRICITY CONSUMPTION

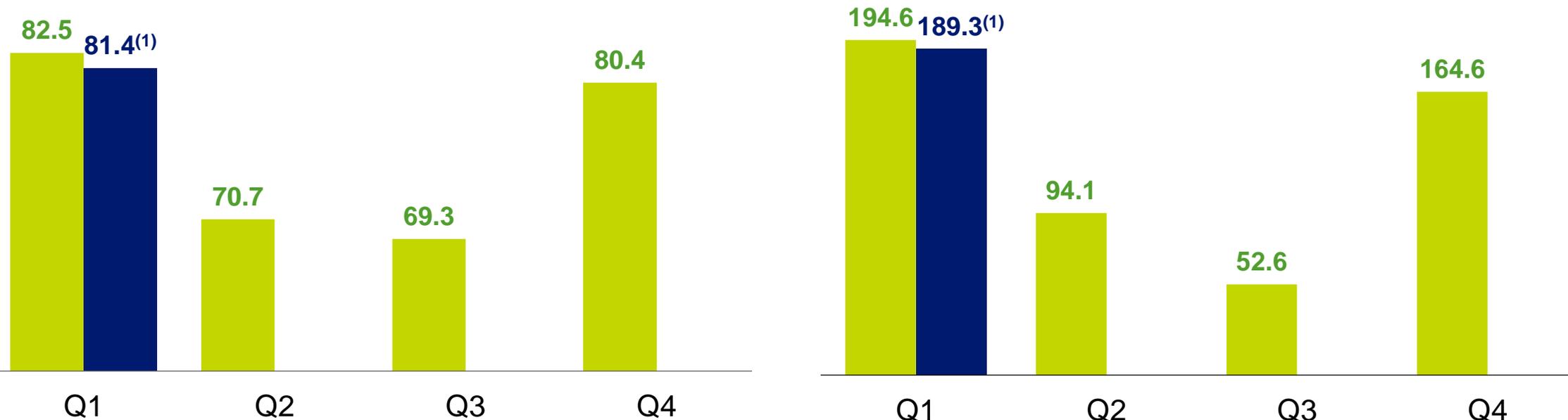
In TWh

## Electricity

2016

2017

## Gas



Electricity consumption was broadly in line with 2016, driven by lower consumption in the domestic sector and higher consumption in the agricultural and industrial sector

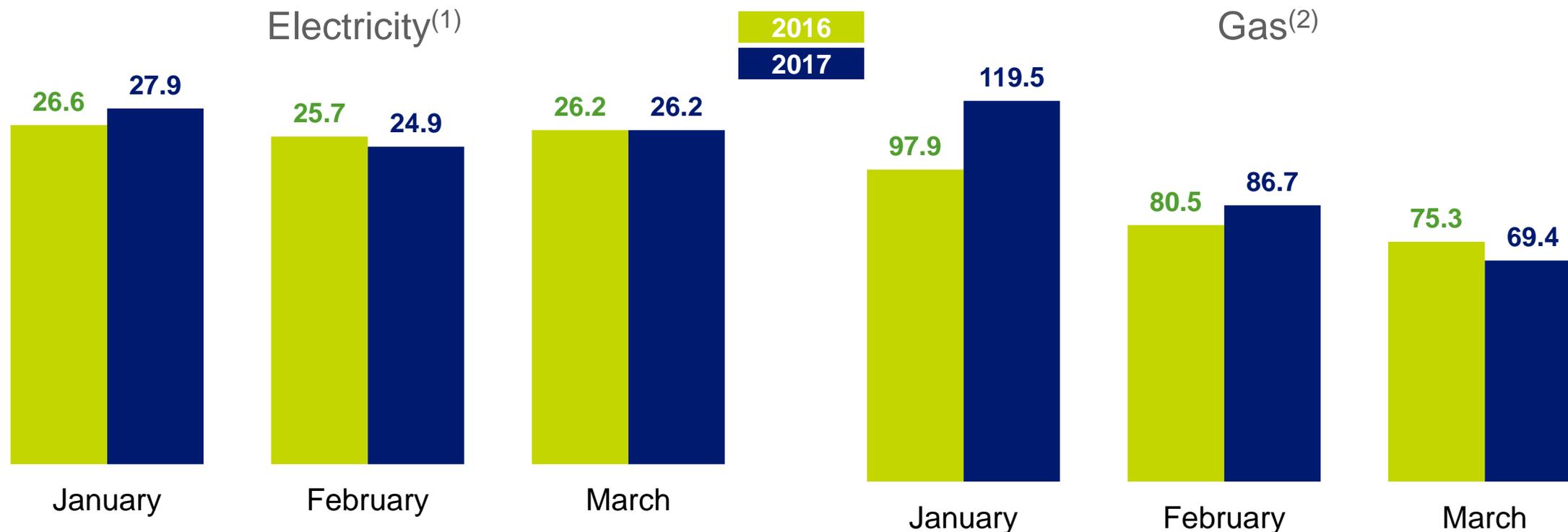
Natural gas consumption in the United Kingdom was slightly down on Q1 2016 due to milder temperatures

Source: BEIS (Historical data revised every quarter)

(1) Estimates from EDF Energy

# ITALY: ELECTRICITY AND GAS CONSUMPTION

In TWh



Electricity consumption up by +0.6% due to exceptional temperatures in January  
 Increase in thermal generation (+10%) offset by a decrease in net imports (-29%) and hydropower generation (-5%)

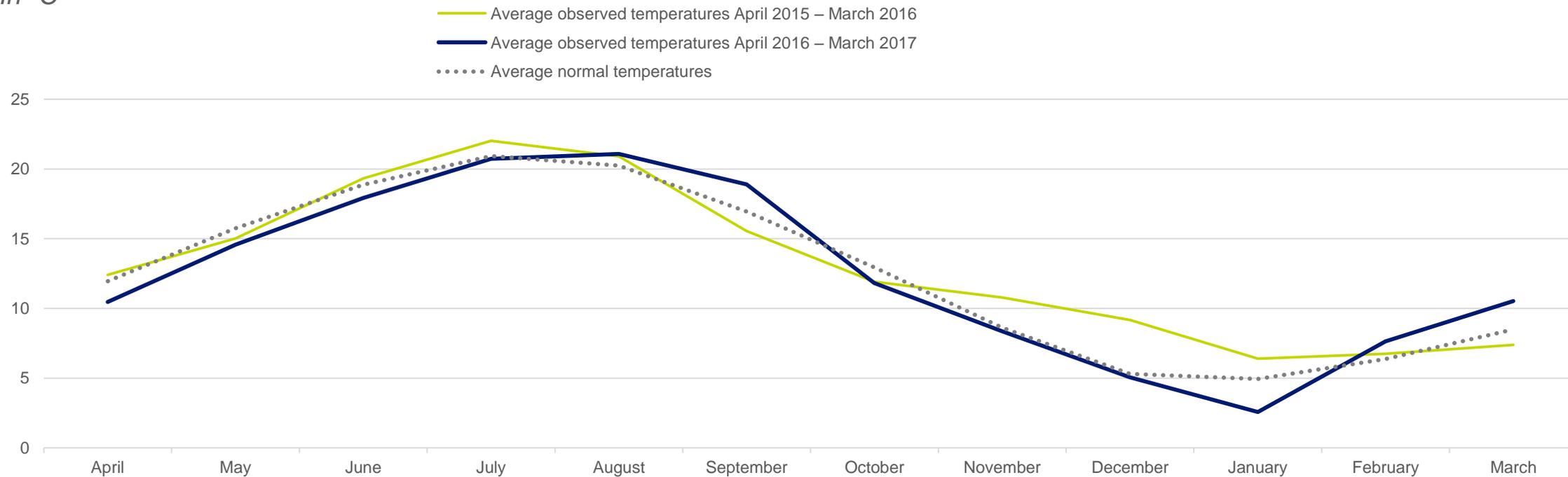
Demand for natural gas increased by 8.6% as a result of higher gas-fired generation output (+18%), given the lower hydropower and coal generation  
 Consumption was also up in the residential market (+5%), due to cold temperatures in January, and in the industrial market (+7%)

1) Source: Terna data restated by Edison

2) Source: Ministry of Economic Development (MSE), Snam Rete Gas data restated by Edison on the basis of 1 Bcm = 10.76TWh

# AVERAGE MONTHLY TEMPERATURES<sup>(1)</sup> IN FRANCE

In °C

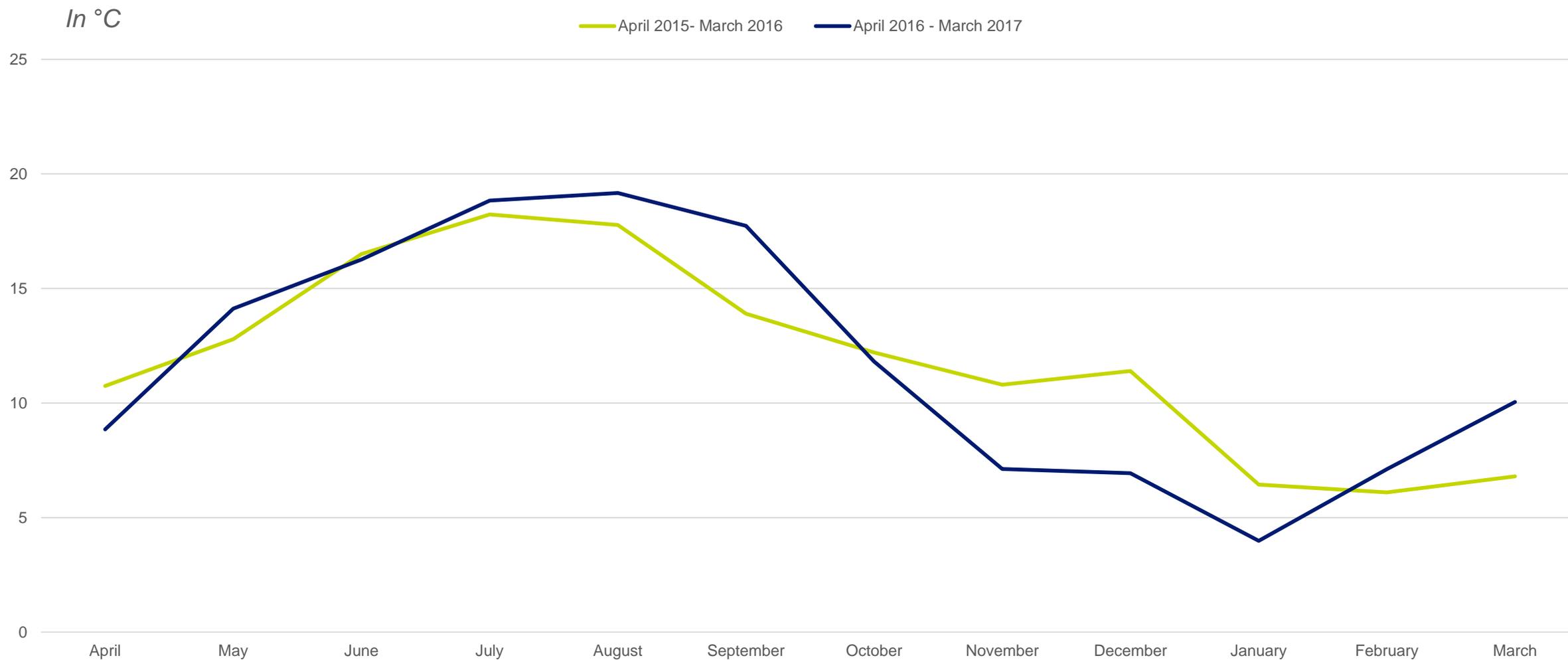


The average temperature over the quarter was stable compared to 2016 at 6.9°C, or 0.3°C above normal. This stability masks a contrasting situation during the quarter. France and Europe were hit by a cold spell in January 2017, with average temperatures of 2.6°C during the month, 2.4°C below normal. February was relatively mild at 7.6°C on average, 1.3°C above normal. Finally, the month of March 2017 was the hottest since 1900 (tied with 1957), with temperatures reaching 10.5°C, i.e. 2.0°C above normal

Source: Météo France

(1) Data based on a basket of 32 cities

# AVERAGE MONTHLY TEMPERATURES IN LONDON<sup>(1)</sup>



Source: Météo France  
 (1) Representative of EDF Energy



---

---

# SALES AND HIGHLIGHTS

## 2017

### FIRST QUARTER

---

---

### APPENDICES

