

French energy policy: the Multiannual Energy Plan

German-French forum on Energy

BERLIN, October 24th, 2019

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Director of Energy**



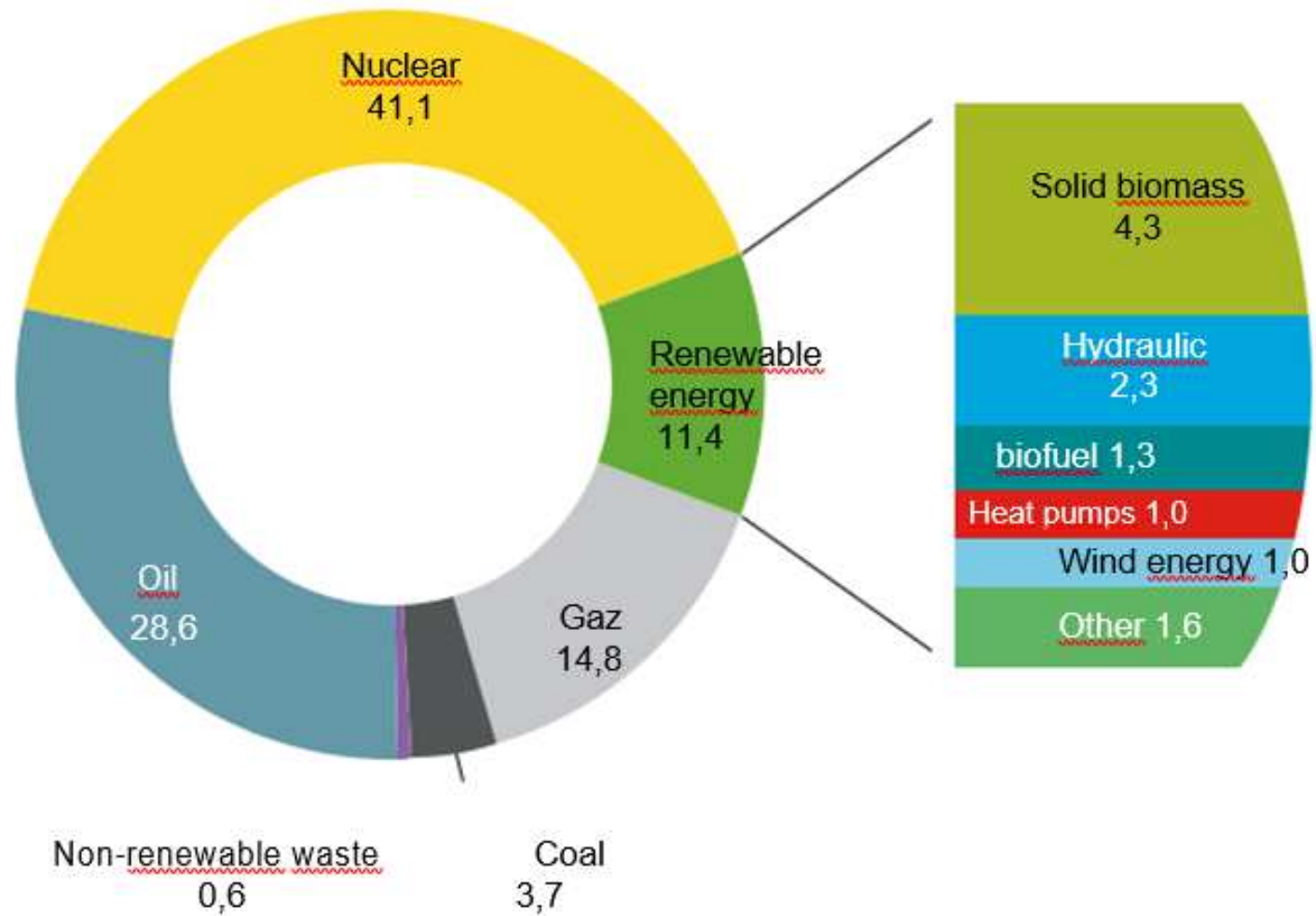
Ministère de la transition écologique et solidaire

<https://www.ecologique-solidaire.gouv.fr/>

The French Energy Mix

Primary energy consumption in 2018

249 Mtep



calculs SDES, d'après les sources par énergie

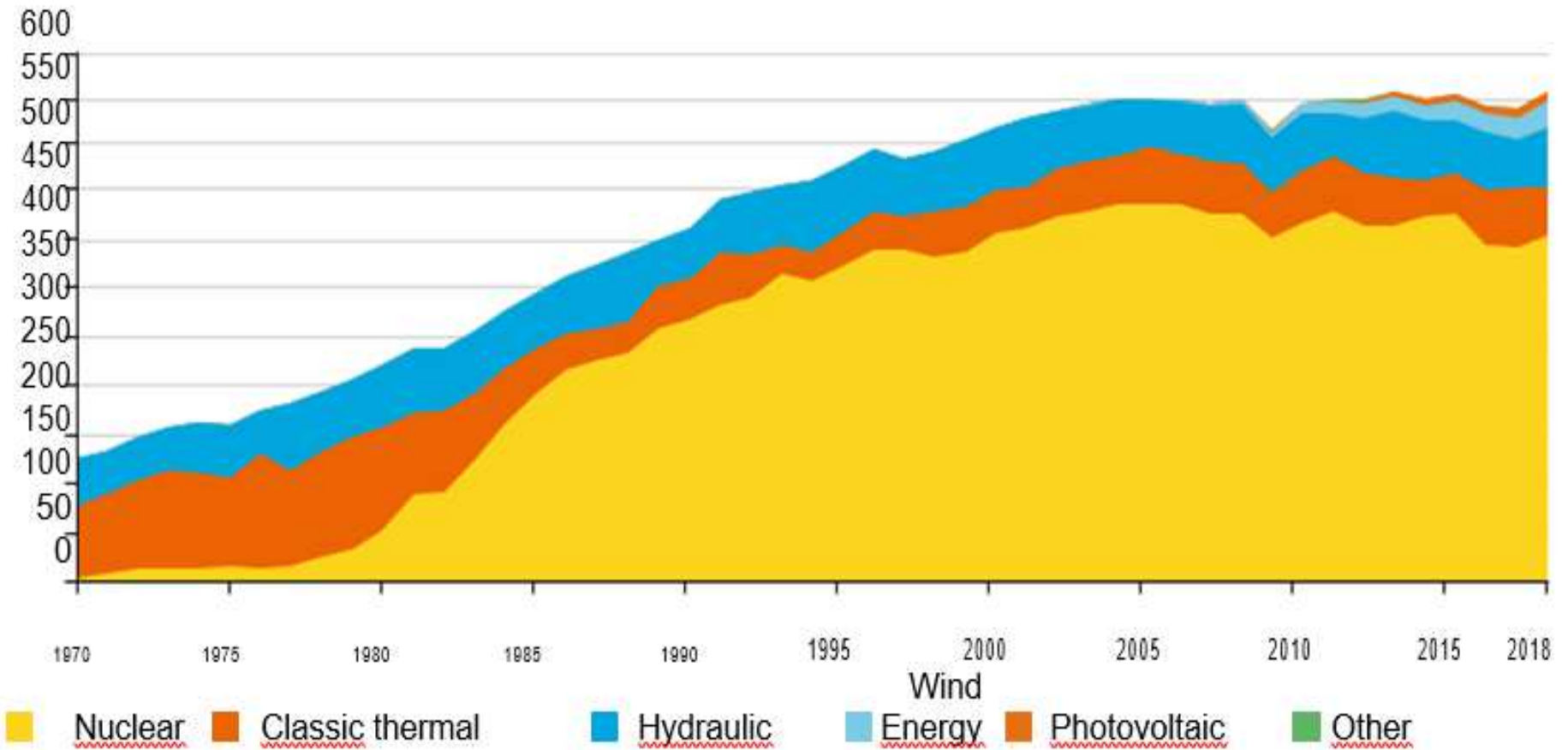


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Electricity facts

Gross electricity production : 557 TWh in 2018



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Energy transition bill (2015) and new law on energy and climate



-40% of greenhouse gas emissions

between 1990 and 2030

and **carbon neutrality by 2050**



Reduce final energy consumption by -50% between 2012 and 2050

And -20% by 2030



-40% of fossil energy consumption by 2030 compared to 2012



In 2030 : **33% renewable in final energy consumption**

40% of the power generation,
38% of final heating consumption;
15% of final fuel consumption
and 10% of final gas consumption



Reduce the share of nuclear to -50% of the power generation by 2035



The Multiannual Energy Plan

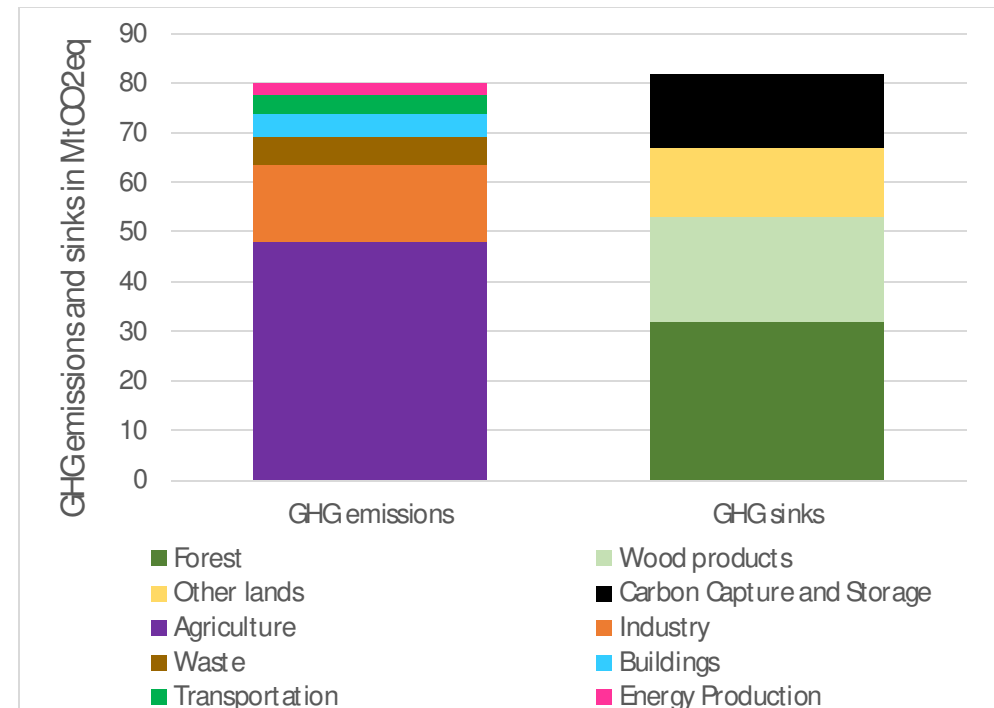
A comprehensive and consistent dynamic for energy transition



Towards carbon neutrality : How do we get there ?

Lessons learned from the scenario

- The **carbon sink** can only balance residual / remaining emissions.
- Almost no **energy related emissions**
- Residual emissions mainly coming from **agriculture** (divided by 2 between 1990 and 2050), **industrial processes and waste**
- A **strong increase in wood use** to store carbon
- **Reasonable use of CCS**



**Reducing energy consumption:
a cornerstone to reach the objectives of Paris agreement
for all sectors**

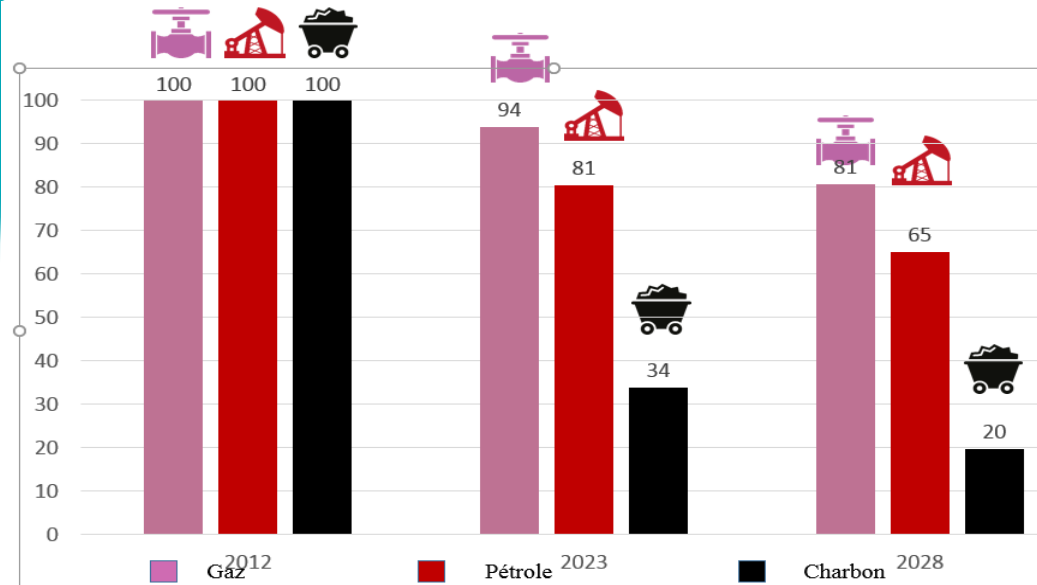


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Decrease of energy consumption : - 20% by 2030

Halt of fossil fuel consumption



2022

Shutdown of the last 4
coal-fired power plants

1 million

Of oil heaters renewed
by 2023

	Fossil fuels	Coal	Oil	Gas
By 2030	-40%	-80%	-35%	-19%

Zero

New thermal power
plant exclusively from
fossil fuel

2028

End of coal use for household
heating
Decrease of industry (steel industry
not included) consumption by 75%



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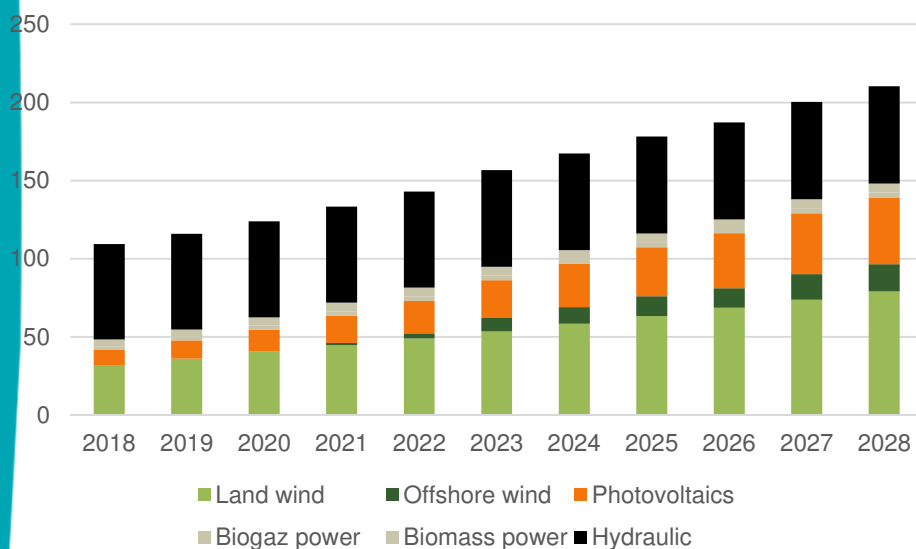
Diversifying the energy mix with incentives to raise renewable and recovered energy



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Promotion of renewable electricity



	2018	2023	2028	2030	2035
Renewables	20%	27%	36%	40%	45%
Nuclear	73%	67%	59%	55%	50%
Fossil fuels	8%	6%	5%	5%	5%

Evolution of final renewable electricity production per source (TWh)

x2,5
Installed capacity of onshore wind

Installed capacity (GW)	2017	2023	2028
Onshore wind	13,5	24,6	34,1 à 35,6
Offshore wind	0	2,4	4,7 à 5,2
Solar power	7,7	20,6	35,6 à 44,5
Methanization	0,11	0,27	0,34 à 0,41
Hydropower	25,3	25,7	26,4 à 26,7
Total	47	74	102 à 113

x 5 to 6
Installed capacity of solar power

Reduction of nuclear capacities in a realistic controlled, economically and socially acceptable way

50% nuclear in 2035

Reduce the share of nuclear generation in
the electricity mix to 50%

14 (out of 58)

Reactors shut down by 2035, most
of them at the age of 50, to reach
50% of nuclear energy in power
generation

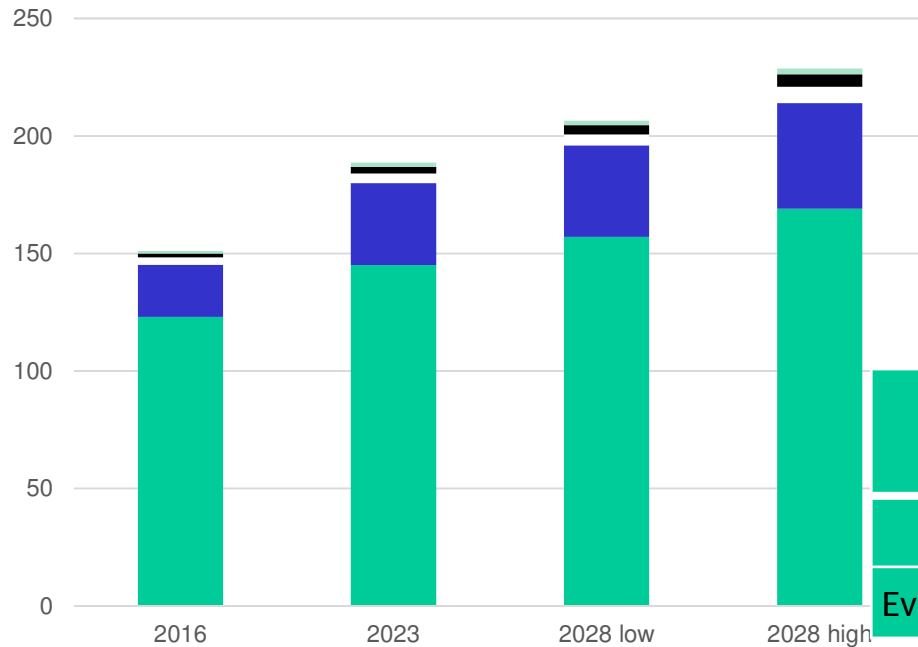
4 to 6

Closed reactors during the PPE period

The option to build new nuclear reactors
will be kept open for the long-term.



Renewable heat is a corner stone towards the end of carbon



■ Biomass
■ Aerothermal heat pump
■ Géothermal heat pump ■ Deep geothermal energy
■ Solar thermal energy

Evolution of final renewable heat production per source (TWh)

2020

Mandatory requirement of a minimum rate of renewable in buildings

2016	2023	Low target 2028	High target 2028
155 TWh	196 TWh	218 TWh	247 TWh
Evolution/2016	+25%	+40%	+59%

White certificates scheme

To convert towards renewable heat

350 millions €

Heat fund budget in 2020



Social inclusiveness and energy poverty

**75 000
houses/year**

Renovated for very low-income households with state grants

1 million

Of grants to switch to low emission vehicles by 2023

**+5,6 millions
of households**

Eligibles to « energy checks »

**Bonus for white
certificate schemes**

For low income households

**Consumers'
protection**

Moderation of electricity prices by revising the regulation of baseload nuclear production



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Thank you for your attention



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