



STRATÉGIE FRANÇAISE POUR L'ÉNERGIE ET LE CLIMAT

PROGRAMMATION
PLURIANNUELLE DE L'ÉNERGIE

2019-2023

2024-2028



PROJET POUR CONSULTATION

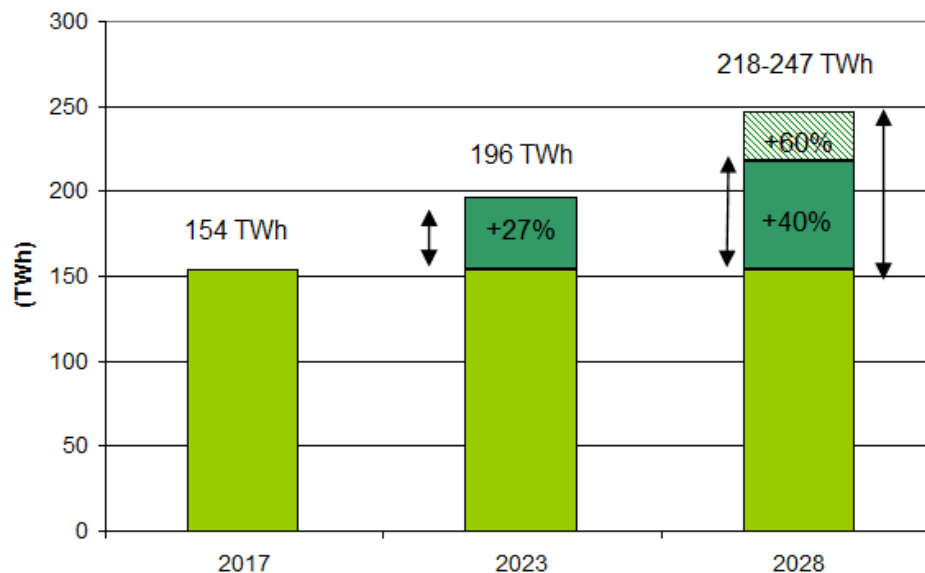
Renewable heat, waste heat recovery and energy efficiency

La Défense, 13 March 2019

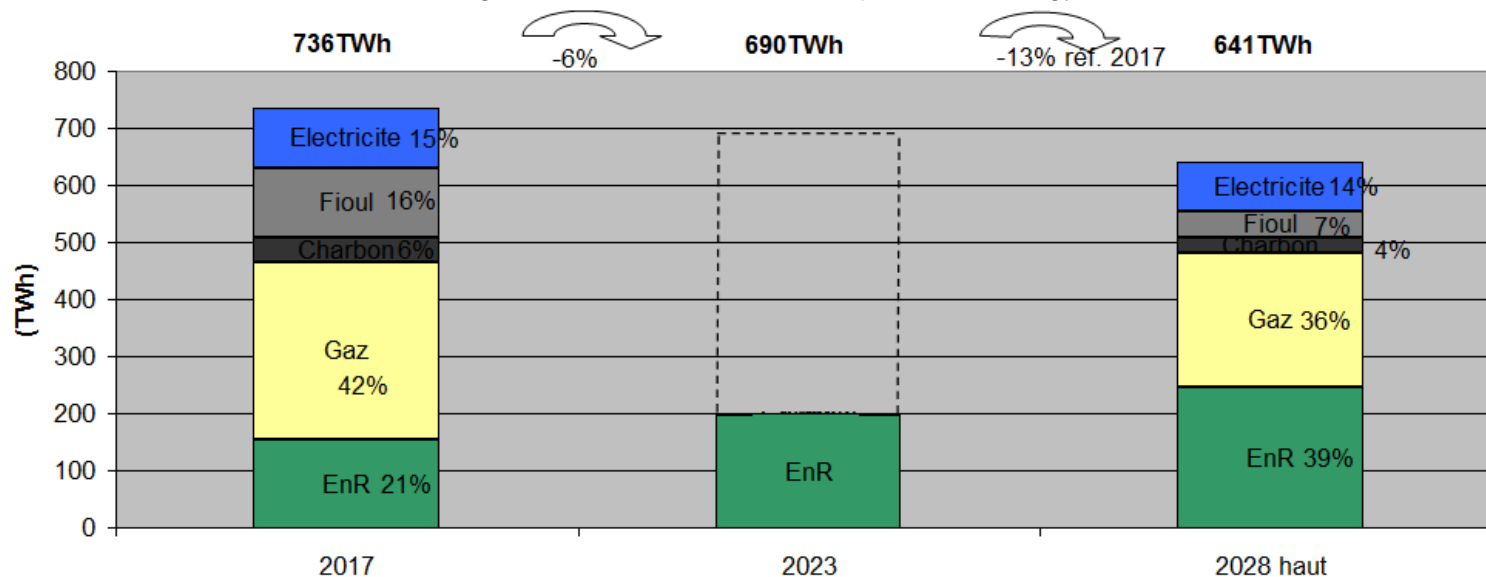
FRENCH STRATEGY FOR ENERGY AND CLIMATE
FRENCH MULTIANNUAL PROGRAMMING FOR ENERGY

Heat consumption reduction and renewable heat growth targets

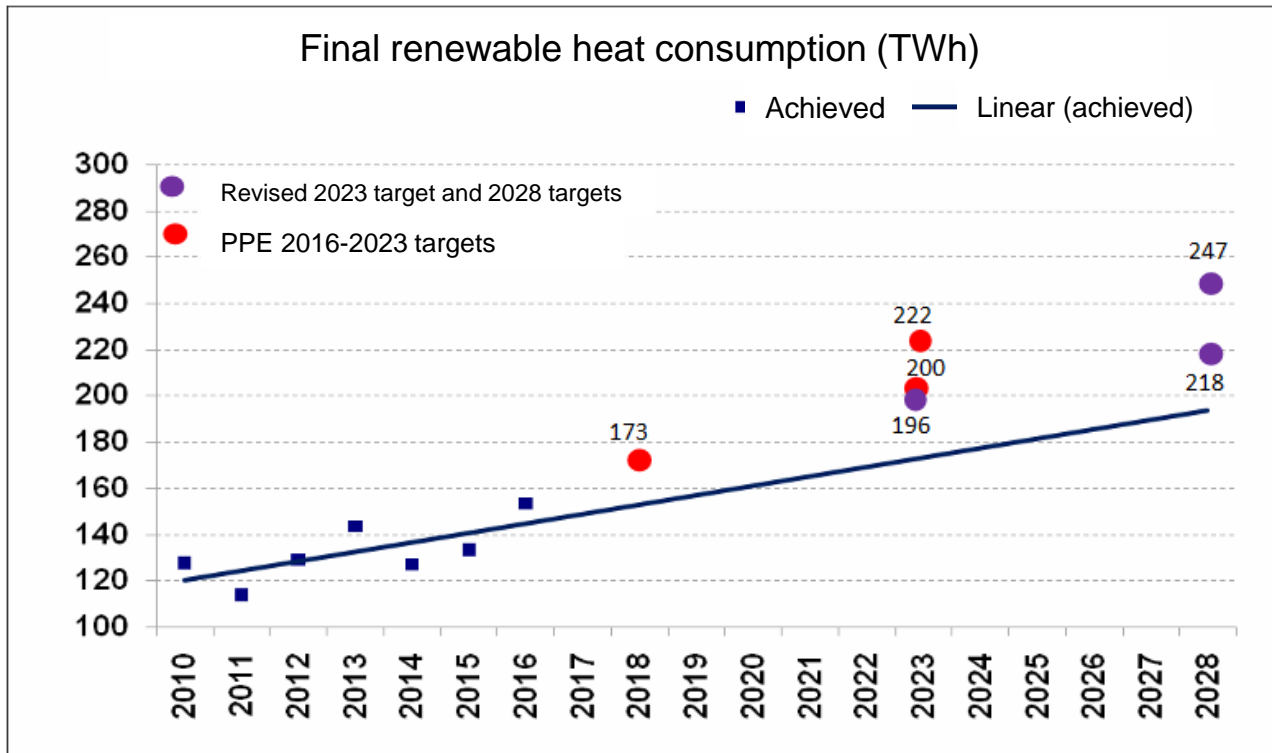
Total renewable heat



Progression of total heat consumption and energy mix



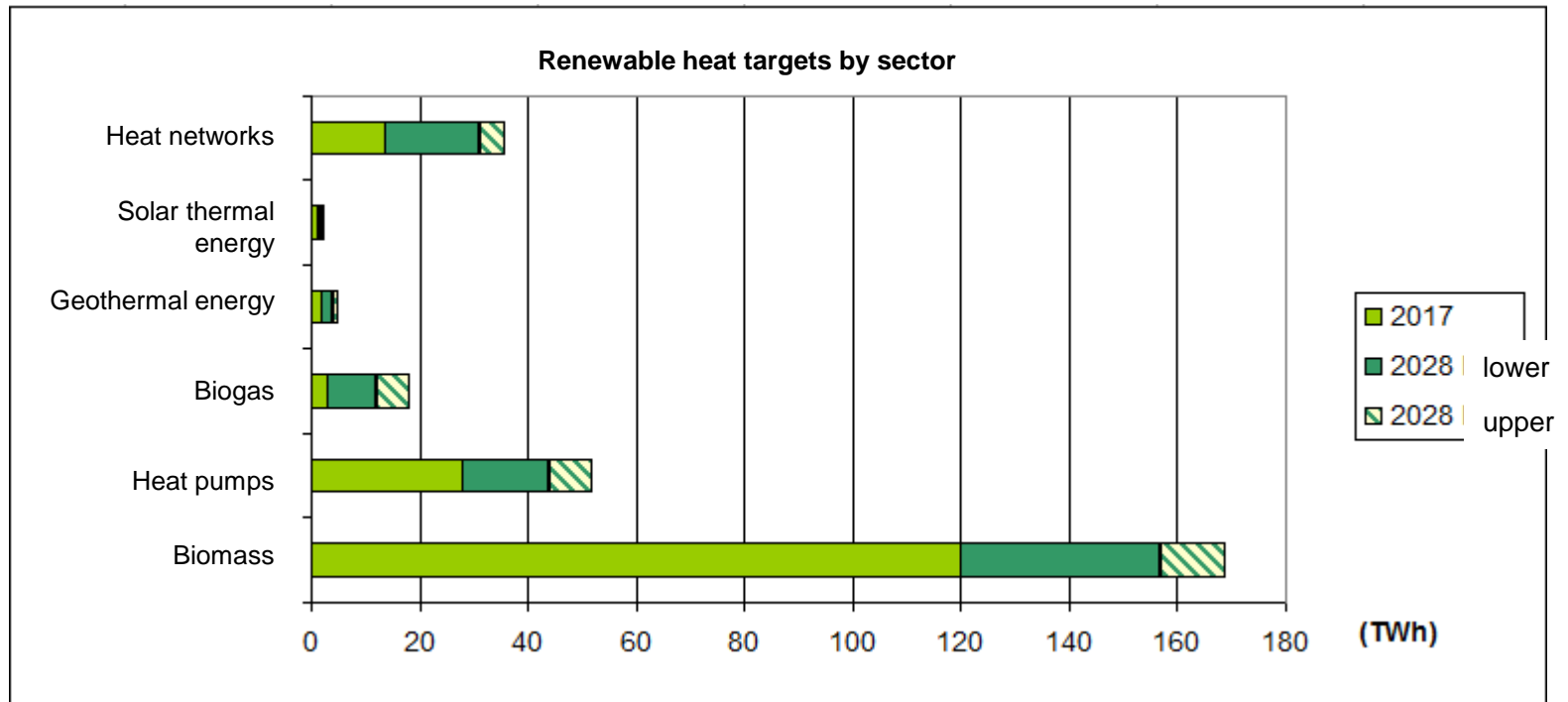
Renewable heat targets




- The 2018 French multiannual programming for energy (PPE) target is achievable with a delay of 2-3 years
- The 2023 PPE target has been revised downwards and is achievable only with additional short-term measures (doubling the Heat Fund as early as 2017 was envisaged in the last PPE)
- The 2028 PPE target results in **between 36.3% and 41.7% renewable heat in 2030** (LTECV 2030 target 38%) depending on consumption reduction/upper or lower PPE range scenario combinations

Renewable heat targets by sector


- The biomass sector is behind on its targets due to the fall in the price of gas, but remains the main sector for renewable heat
- The air-source heat pump sector is ahead of the targets set and recording strong growth
- The heating networks and biogas sectors are progressing as expected and look set to continue this trend
- The geothermal, ground-source heat pump and solar sectors are lagging behind but offer significant potential




Measures designed to reduce fossil fuels in the heat mix

Target	Key actions/Accompanying measures
<p>Reduce industrial coal consumption by 75% by 2028 (excl. iron and steel)</p> 	<ul style="list-style-type: none"> • Heat Fund to prioritise the replacement of coal in industry and heating networks by biomass (including waste wood) • Waste Fund to prioritise the replacement of coal by SRFs • Continue trials designed to reduce CO₂ emissions in the iron and steel sector under the Future Investments and Innovative Demonstrators programmes by 2028
<p>End domestic coal-fired heating in housing by 2028 and reduce heating oil consumption by replacing it with more efficient alternatives</p> <p>Replace 10,000 coal-fired heating systems (50% of those currently in use) by 2023 and all of them by 2028</p> <p>Replace one million heating oil boilers (30% of those currently in use) by 2023 and three million by 2028</p>	<ul style="list-style-type: none"> • Extend the CITE (French energy transition tax credit) to cover the removal of heating oil tanks for low-income families in 2019 • Continue and boost the CEE “Coup de pouce” programme for replacing old boilers with renewable solutions or VHEP gas boilers • Maintain CITE incentives for the installation of renewable heating and connections to renewable heating networks • Extend the existing CEE “Coup de pouce” programme for heating oil to cover the switch from coal- to wood-burning stoves • From March 2019 offer 0%-interest “eco-loans” on a flat rate basis for single-initiative energy efficiency improvements


Measures designed to increase industrial energy efficiency (I)

Target	Key actions/Accompanying measures
<p data-bbox="131 331 745 522">Reduce industrial energy consumption and develop solutions with lower greenhouse gas emissions</p> 	<ul data-bbox="784 331 1831 1105" style="list-style-type: none">• Experimentation in order to extend Energy Saving Certificates (CEE) to energy-saving initiatives implemented in plants subject to the EU's Emissions Trading System• Continue to increase applications for the “eco-energy loans” made available by BPI France for VSEs/SMEs carrying out improvements eligible for Energy Saving Certificates. Extend the “eco-energy loan” scheme until 2025.• Promote the rollout of energy management systems (ISO 50 001-type) and energy benchmarks in the industry• Include a technical/economical solar or geothermal heat production assessment in energy audits for large and medium-sized businesses

Measures designed to increase industrial energy efficiency (II)

Target	Key actions/Accompanying measures
<p>Improve waste heat recovery in industry and data centres</p> 	<ul style="list-style-type: none">• Assess the possibility of implementing the ADEME report recommendations on funding waste heat• Make the energy use compulsory for biogas emitted in landfill sites compulsory• Update the ADEME report on the potential for waste heat recovery
<p>Increase the improvement in energy efficiency of household waste incineration plants (HWIP)</p>	<ul style="list-style-type: none">• Go beyond the energy efficiency criteria of existing units (BREF)• Take specific action with regard to the few remaining incinerators without energy recovery• Continue supporting waste heat recovery and heating networks through the Heat Fund

Measures designed to increase building energy efficiency (I)

Target	Key actions/Accompanying measures
<p data-bbox="100 329 697 422">Reduce energy consumption in buildings</p> 	<ul data-bbox="767 329 1812 1172" style="list-style-type: none">• Implement the Building Energy Improvement Plan (PREB)• Work under the FAIRE banner to identify relevant domestic improvement solutions• Apply energy efficiency requirements to existing tertiary buildings to achieve a 40% reduction in energy consumption (compared to 2010) by 2030, targeting all sectors of activity and restricting exemptions to buildings below 1000m²• Finalise the new environmental performance of buildings standard (RE 2020) by updating the primary energy conversion factors for electricity to take into account the projected 2035 electricity mix in the PPE• Include a criterion on greenhouse gas emissions over the entire lifecycle of a building in the RE 2020, ensuring that the impact on electricity spikes is limited


Measures designed to increase building energy efficiency (II)

Target	Key actions/Accompanying measures
<p>Reduce energy consumption in buildings</p> <p>Specific measures for households</p>	<ul style="list-style-type: none"> • From 2019, extend the CITE for low-income households to cover labour costs on the installation of renewable heat systems and the removal of heating oil tanks • Modify the CITE in 2020 making it a flat-rate, technology-specific payment that takes into account the production of renewable heat • Extend the CITE to landlords in 2020 • Make CITE be paid by the French National Housing Agency (ANAH) for households eligible for subsidised rates at the time of the improvement works • Extend 0%-interest eco-loans on a flat-rate basis to single-initiative improvements carried out in isolation • Maintain VAT at 5.5% for CITE-eligible single-initiative energy efficiency improvements and related works • Finance the full cost of an energy audit for low-income households in poorly insulated owner-occupied homes (performance certificates F or G) • Make this audit compulsory prior to letting or selling a privately owned category F or G dwelling by 2021

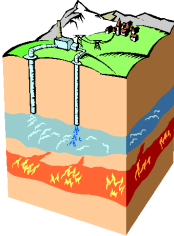


Measures designed to promote renewable heat in buildings

Target	Key actions/Accompanying measures
Develop renewable heat in new buildings (individual, collective and tertiary)	Finalise and implement the new environmental building regulation, in particular by: <ul style="list-style-type: none">• making a minimum percentage of renewable heat compulsory in all new buildings from 2020 onwards (future RE 2020),• providing feedback on the calculation engine used in the RT2012 and the E+C- trials to add value to renewable heat,• ensuring that renewable heat and renewable electricity are equally applied in the E+C- scheme.

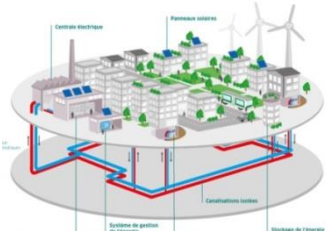
Measures designed to promote renewable heat

Target	Key actions/Accompanying measures
<p data-bbox="131 325 627 368">Develop biomass projects</p> 	<ul data-bbox="710 325 1831 939" style="list-style-type: none">• Promote biomass heat use over high performance cogeneration. Make heat the clear priority in terms of biomass energy use• Rapidly replace low-performance independent wood-fired heating devices by systems that offer better performance and air quality (green flame, pellets, etc.)• Organise a public information campaign to raise awareness of good domestic wood-burning practices• Continue to support biomass heating plants in collective housing and industry through the Heat Fund
<p data-bbox="131 1015 569 1153">Joint solar thermal and geothermal energy measures</p>	<ul data-bbox="710 1015 1812 1275" style="list-style-type: none">• Include a technical/economical solar or geothermal heat production assessment in energy audits for large and medium-sized businesses• At least one geothermal and solar thermal energy coordinator per region

Measures designed to promote renewable heat

Target	Key actions/Accompanying measures
<p>Develop deep geothermal energy</p> 	<ul style="list-style-type: none"> • Support heat-pump-assisted geothermal energy and geothermal renewable cooling projects through the Heat Fund • Ensure the continued existence of the SAF guarantee fund, adapting it as required to develop the potential of little-known new aquifers (ADEME report 2019)
<p>Develop surface geothermal energy</p> 	<ul style="list-style-type: none"> • Allow the Heat Fund to contribute to the financing of regional survey maps for geothermal micro-generation (GMI) and funding for decision-making support on the economic profitability of surface geothermal energy resources
<p>Develop solar thermal energy</p> 	<ul style="list-style-type: none"> • Extend the Heat Fund's call for proposals for large-scale solar energy projects for at least three years • Provide information and guidance on the benefits of solar thermal energy in the agriculture sector • Allow the Heat Fund to provide funding for the refurbishment of defective installations • Develop a communications kit for energy advisers on the benefits of solar thermal energy in individual homes

Measures designed to promote renewable heat

Target	Key actions/Accompanying measures
<p>Develop heating and cooling networks (new networks, extensions, greening) to achieve a 5-fold increase in the delivery of renewable and recovered energies by 2030</p> <p><i>Indicative targets:</i></p> <ul style="list-style-type: none"> • <i>5 million dwelling equivalents connected in 2030</i> • <i>A 3-fold increase in renewable cooling delivered by 2030</i> • <i>65% renewable and heat waste recovery energies in heat and cool networks by 2030</i> 	<ul style="list-style-type: none"> • Require heating network feasibility studies to be carried out in all sufficiently densely populated towns/cities (10,000 inhabitants) • Ensure the integration of renewable energies and heat waste recovery into regional development policies and planning regulations • Promote a system of network classification that allows local authorities to make connection to their networks compulsory for all new and fully renovated buildings subject to certain conditions • Maintain VAT at 5.5% and extend it to heating networks supplied by solar thermal energy • Maximise the percentage of renewable and recovered energy projects supported by the Heat Fund • Extend Heat Fund support to renewable cooling networks (and consolidate a definition which is recognised at the EU-level) • Encourage social landlords to set targets for increasing renewable and recovered energies and combatting energy poverty

Strengthening and simplifying the Heat Fund

- The Heat Fund supports renewable heat projects and is open to collective housing, local authorities and businesses. It needs to be strengthened starting in 2018 with increased budgets of EUR 259 million in 2018, EUR 307 million in 2019 and EUR 350 million in 2020 (based on the increase in the CCE set out in the 2017 Initial Finance Law)

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Heat Fund commitment authority (M€)	259	307	350	350	339	319	299	279	259	239	219

- Simplify the rules governing the Heat Fund: replace the current system of refundable advances for Heat Fund projects with grants
- Simplify the Heat Fund rules: move closer to EU guidelines by coming into line with its maximum support levels for heating networks and by applying the more favourable European framework for non-economic activities as soon as possible
- Develop regional renewable energy development contracts as part of the Heat Fund to make it possible to subsidise clusters of small projects