EDF promotes efficient electrification of heating

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Consumption stable, emissions struggling to fall

The building sector in France
• 1st energy consumer with 45% of consumption
• 2nd largest emitter of CO2 with 25% of emissions

How can we achieve a "near zero emission" building sector?
Heat Pumps enable this breakthrough

• Heat Pumps are efficient: on average, a production of 4 kWh of heat with 1 kWh of electricity and 3 kWh of ENR.

• When replacing a fossil boiler
  – Electric Heat Pump power is 3 to 4 times less than the power of thermal boilers
  – Heat Pump consumes 5 to 6 times less final energy than the old inefficient boilers

• Heat Pumps tick several boxes
Massive roll out will have limited impact on consumption and load

The RTE/ADEME study (December 2020) shows that the development of electric heating with efficient solutions such as heat pumps:

• Has no significant impact by 2035
• Generates a small or even decreasing evolution of the electricity consumption and peak

And the peak(s) will also be much more managed using:

1. the flexibility potential of thermodynamic water heaters
2. new flexible uses such as electric vehicle charging
EDF aims to be the leader in the sale of air-to-water heat pumps on the French Renovation market of Houses

Focus on some EDF Actions:

• Investment in EDF R&D laboratories in material testing and co-development with selected OEMs to expend the product range
• Preparation of value-added and digital tools/services
  - On the short term, development of sizing and parameterization tools for heat pumps to be installed in homes
  - On the medium term, artificial intelligence for (predictive) e-maintenance

What's needed to accelerate the pace

• A Carbon first policy, in addition to policy measures on energy efficiency
• Review of the taxation policies of carbon-based energies
• Make the installation of a heat pump accessible to low-income households
• Help decarbonized industry with heat pump (financing funds)