

Towards a climate-neutral Europe Setting the frame for power plants providing 'dispatchable renewable energy'

EUGINE welcomes the EU's climate neutrality ambition and supports the related ongoing preparatory work. The manufacturers of engine power plants strongly believe in the role of both 'sector coupling' and all kinds of gas, from natural gas to renewable gases, as essential means for an efficient and successful decarbonisation.

1. Reaping all the benefits of 'sector coupling'

Coupling the electricity, gas and heating/cooling networks allows to benefit from the advantages of all three energy carriers.

Via Power-to-Gas, surplus electricity from wind & solar may be converted into renewable hydrogen and even further processed to obtain synthetic renewable fuels. Whenever power production from wind & solar is declining, the different green fuels, including also a large amount of biogas and biomethane, may be reconverted into electricity (and heat/cold) by cogeneration/power plants.

Sector coupling could in that sense become a **major source of synergies, efficiency and flexibility.**

Achieving this objective means understanding sector coupling should not be a

modest one-way process (power-to-gas) but an ambitious two-way system (including also gas-to-power & heat/cold) balancing the electricity, heat & gas grids, by offering short to long term flexibility including seasonal storage.

Technology on all sides of tomorrow's 'flexibility system', electrolysers as well as 'climate-neutral' power plants, are to become energy transition's key assets. Being able to provide renewable electricity and heat/cold at any point in time, unlike 'variable Renewable Energy Sources' (vRES) wind & solar, such climate-neutral power plants should be considered as 'dispatchable Renewable Energy Sources' (dRES).

A recent study from Greenpeace Energy mentions for Germany a potential of 160 TWh of renewable gas to be re-electrified per year by such flexible gas power plants for ensuring security of electricity supply, in a decarbonised system.

2. Decarbonising the gas grid, a prerequisite

As shown by several studies, the electrification of the energy system should be considered as one of the relevant solutions, not a silver bullet: switching to



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- Gas represents a key solution for both short-term GHG emission reduction with natural gas and long-term climate-neutrality with renewable gases
- Gas engines can run already today on biogas/biomethane (17000 plants in Europe) and in the future on hydrogen and derived synthetic fuels
- The European Green Deal should create the necessary incentives for developing the required renewable fuels

EUGINE is the voice of the European engine power plants industry, representing the leading European manufacturers of this flexible, energy-efficient, reliable and environmentally sound technology. Engine power plants are an optimal solution for both backing-up and generating renewable energy (e.g. with biogas), cogeneration applications as well as to ensure security of supply.

electricity in the heating and industry sectors would require huge power grid investments and thus excessive costs for electricity storage.

Progressively switching the gas grid to renewable gases represents a complementary very promising solution: Europe would further use its [existing gas infrastructure characterised by a high storage capacity and relatively low transport costs](#).

3. Making green fuels available

In view of the quantities of fuel that the decarbonisation of Europe will require, the production of [all kinds of green fuels](#) should be promoted, from biogas to hydrogen and synthetic fuels.

In a similar way as for wind & solar in the past, clear incentives should be adopted:

- [a target for renewable and decarbonised gases in Europe's gas pipelines by 2030](#). As an example, for the same time horizon, France adopted a target of 10% renewable gas in its overall gas consumption.
- [a support scheme making green fuels a sufficiently attractive investment to quickly scale up production](#)

- [a reliable system for guarantees of origin](#) certifying the renewable or decarbonised status and thereby conferring them a higher value than traditional fuels. This also serves as proof for renewable electricity from gas.
- the EU should start [cooperating with potential hydrogen production countries](#) (e.g. Maghreb).

4. Green fuels for security of electricity supply

In tomorrow's climate-neutral Europe, flexible & dispatchable power plants will continue playing a key role, ensuring constant security of electricity supply. If wholesale electricity prices are not sufficiently high to provide a business case for renewables-based flexible power plants, EU decision-makers should consider [solutions for overcoming the market failure](#).

5. Need for a predictable & reliable blending

Equipment connected to the gas grid needs a suitable and predictable gas composition to ensure a proper functioning. Blending renewable and decarbonised gases in Europe's gas pipelines will change these parameters. To avoid technical problems:

- [manufacturers of grid-connected technologies should be involved](#) in the further development of today's gas grid
- [a detailed and binding roadmap](#) should ensure that the blending process is predictable & reliable
- [flawless digitalised communication flows](#) need to be established between gas grid and technology operators.

6. The next steps, on the short term

New engine power plants like in Kiel, Germany, show that CO₂ emissions can be quickly reduced by 70% when [switching from an old inflexible coal power plant to flexible gas engines](#). The future 'Just Transition Fund' should support coal regions willing to switch to flexible gas power plants - thereby ensuring a quick emission reduction with natural gas on the short term and later switching to renewable gases as they become available. Finally, on the very short term, EUGINE proposes:

- To open the future [hydrogen partnership](#) under Horizon Europe to [all H₂ technologies, from fuel cells to gas engines](#)
- To use the hydrogen-focused [IPCEI to demonstrate on a large-scale the value and feasibility of the 'two-way sector coupling'](#).

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