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Climate and energy: How to escape a double crisis?

EDF is among the world's largest power companies, and it wants to play a critical role in Europe's path towards net zero.



Via EDF – COLIN MATTHIEU / TOMA

BY POLITICO STUDIO

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Q&A with Jean-Bernard Lévy, Chairman and Chief Executive Officer, EDF

According to its CEO, Jean-Bernard Lévy, it is possible for the EU to emerge stronger from the current energy crisis, and better positioned in the fight against climate change. While there is no silver bullet, the combination of accelerated direct and indirect electrification, based on renewable and nuclear electricity, may offer an efficient and just pathway towards a more resilient and energy independent EU.

Politico Studio: *Natural gas prices have skyrocketed this year and there are concerns that all of Europe will soon be facing an energy crisis, as has already been the case in Spain and Italy. What does this situation tell us about the need to accelerate decarbonization?*



Jean-Bernard Lévy: I view this as a teachable moment. The current energy crisis underscores the urgent need to accelerate the development of renewable and carbon neutral energy sources. Being overly dependent on imported fossil energy has left European citizens vulnerable to supply chain shocks and global energy market fluctuations.

In the heat of the crisis, hasty and detrimental measures have been implemented – look at the Spanish claw back, for example. This is dangerous because it jeopardizes the sector's capability and trust to invest in zero carbon sources going

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While the short-term electricity market is well functioning, final consumers' price structures and the allocation of taxes and levies across energy carriers are areas where urgent improvement is ✕

needed. There is also a very real need to foster long-term signals and mechanisms that will accelerate investments in renewable and carbon neutral generation.

Politico Studio: *As the CEO of one of the world's largest power company, the decisions you and your team make will have a tangible impact on the European and global green transition. What are your near- and long-term priorities, and how would you describe your approach to tackling the climate crisis?*

Jean-Bernard Lévy: EDF is a leader in the fight against climate change, and you are correct in saying that what we do will have a tangible impact on the green transition. Our raison d'être, enshrined in our statutes, is to build a carbon neutral future. We are the continent's leading producer of renewable electricity, with the foremost hydropower capacity in the European Union. And we are also the largest generator of nuclear electricity in the world. Our strategy: renewables and nuclear power. That's how we achieve a 97 percent decarbonized electricity mix in France. We already produce 25 percent of the bloc's low carbon electricity.

Our CAP 2030 strategy includes doubling our installed renewable capacity to 60 gigawatts by 2030 and becoming the EU leader in electric mobility with the operation of 150,000 interoperable electric stations by 2023.

Politico Studio: *Why does Europe need electrification?*

JBL: Because it is the only way to achieve Net Zero. The EU power sector is on a pathway towards full decarbonization, and electric solutions are intrinsically more energy-efficient, and also reduce air pollution: that is why electrification is the way to go. An electric car is 3 times more efficient than a traditional car and emits at least 50 percent less CO₂ over its lifetime. An electric heat pump is 3 to 4 times more energy efficient than a gas boiler and it reduces CO₂ emissions by 80 percent.

But electrification is not going fast enough. Today, electricity covers 22 percent of the EU's energy consumption, but it needs to reach at least 50 percent-60 percent by 2050 for the EU to become carbon neutral. 'Fit for 55' includes ambitious proposals to boost electrification policies.

Politico Studio: *How feasible is zero carbon electricity, and what are the biggest challenges facing widespread adoption?*

JBL: Two thirds of the electricity produced in the EU was carbon-free in 2020. And the French electricity mix was 92 percent carbon-free. A range of clean and efficient solutions such as renewables, nuclear, efficiency and storage solutions, demand side flexibility and smart grids are needed to achieve a carbon neutral electricity mix.

Let me highlight two main roadblocks. First, permitting for new generation and infrastructure projects: urgent improvement is needed on that front if we want to be in a position to reach our

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EU targets. Second: the lack of sufficient long-term investment signals and schemes for carbon neutral energy sources.

When it comes to electrification itself, energy taxation policies must be adjusted to reflect the impact of energy sources on climate. It is nonsense to tax low carbon electricity with higher rates than fossil gas. On the electric mobility front, we need to address the infrastructure challenge for charging points and tackle range anxiety, something that is promoted in the 'Fit for 55 package'.

Politico Studio: *What is your outlook for the development of the decarbonized, or green hydrogen industry, and what role will EDF play in supporting its growth?*

JBL: Electrolytic hydrogen fueled with renewable and low carbon electricity can complement direct electrification in sectors that are difficult to decarbonize. In France and the Nordics, which have a low carbon electricity mix, it is possible to connect electrolyzers directly to the grid to produce large volumes of low carbon hydrogen. This allows hydrogen production to be located close to industrial and transport clusters, thus limiting the need for hydrogen transport and storage infrastructure. Given the great uncertainties about future volumes of hydrogen, we need to take a stepwise approach before deciding to invest in a huge EU hydrogen network. The current crisis is also a reminder that we have to be cautious with strategies that rely massively on imports.

In 2019 we launched Hynamics with the ambition to become a key player in the hydrogen market by producing renewable and low carbon hydrogen solutions for industrial clients and mobility providers. We have also invested in McPhy, a leading electrolyzer manufacturer. With our Hynovi project in France and the Hyscale project in Germany which are lined-up for the hydrogen IPCEI, we want to contribute to scaling electrolysis supply chains in Europe. And first commercial projects are a reality. I recently inaugurated a 1MW hydrogen bus refueling station in Auxerre, for instance.

Politico Studio: *Nuclear energy will play an important role in meeting the EU's climate targets, and EDF's nuclear output is set to exceed expectations in 2021. What is your prescription for the French nuclear industry?*

JBL: To put it plainly, we need nuclear. For France, analysis shows that a successful pathway to carbon neutrality in 2050, while maintaining security of supply, avoiding hazardous technological choices, and containing costs, requires a robust share of nuclear capacity.

Three pairs of new EPR2 (European Pressurized Reactor 2) nuclear reactors, gradually commissioned between 2035 and 2045, would enable the French electricity mix to stay on track to Net Zero, while supporting the accelerated development of renewables. In 2019 we launched "Excel", an ambitious plan that will drive the French nuclear industry to achieve the highest standards of craftsmanship, quality and excellence. Our aim is to ensure that nuclear power, a carbon-neutral energy source, continues to fulfill its pivotal role in the fight against climate change.

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Small Modular Reactors (SMR) are also a very promising new technology complementary to their larger counterparts because they can operate in market segments where large reactors would not necessarily be appropriate. With their small size, simpler and modular design and a strong standardization that allows scaling effects, small reactors can also be installed in close proximity to final demand.

We see the potential, and so joined forces with CEA, Naval Group, and TechnicAtome, to launch the NUWARD SMR project in 2019. Each plant can provide enough safe and reliable low-carbon energy to power hundreds of thousands of homes, or can be used to power hydrogen manufacturing facilities, desalination plants, or energy-intensive industrial sites. We want to involve the European nuclear supply chain and we believe the project unveiled offers a promising first step towards expanding the range of solutions for the low carbon baseload energy offered by the French nuclear industry.

Politico Studio: *There have been reports that EU competition rules might be made more adequate to accommodate digital and clean investment, enabling member states to spend more on projects supporting the transition. What would your advice to policymakers be when it comes to supporting clean projects?*

JBL: Achieving climate neutrality is the compass that must guide our industrial and economic choices. The competition objective is a means to an end. The revised environment and energy state aid guidelines should allow support measures for all forms of zero-carbon energy, as well as for downstream solutions such as heat pumps and flexibility sources.

My advice to policymakers is to facilitate the development of zero-carbon technologies by allowing support mechanisms that provide the long-term signals needed to reduce capital costs and trigger investment decisions.

Politico Studio: *Regarding the EU's green taxonomy: What is your view on the guidelines the EU has so far drafted, and why should nuclear power be considered a green investment?*

JBL: The private sector must be encouraged to invest in projects that comply with the Paris Agreement on the basis of technological neutrality and scientific findings. This must be the purpose and ambition of the taxonomy.

The contribution of nuclear power to the fight against global warming has been continuously recognized by authoritative organizations including the International Energy Agency (IEA) and the IPPC (Integrated Pollution Prevention and Control). For more than fifty years, the European nuclear industry has proved that it is reliable and that nuclear installations are safe for man and the environment.

The authoritative report of the Joint Research Centre of the European Commission unambiguously confirmed the positive contribution of nuclear to the objectives set out in the EU ×

I hope that we will soon see a positive proposal from the Commission.

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By Annabelle Dickson

