- IRCE Symposium -
Energy solidarity, self-reliance, interdependence, security, segmentation and optimisation in Europe

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Nuclear is an essential part of the European electricity mix

1 Nuclear is essential for decarbonation

- Nuclear is the single largest power source in Europe (25% of the mix), and accounts for half the CO2-free power produced in the EU
- The 2018 European long-term strategy states that renewables and nuclear will be the backbone of a de-carbonised European electrical system. Nuclear would account for 15% of the total ie slightly less than the current 122 GW installed
- The 2018 MIT study on decarbonisation (http://energy.mit.edu/research/future-nuclear-energy-carbon-constrained-world/) concluded that all decarbonisation projects are significantly less costly if they include both nuclear and renewable
- Pretending to decarbonise without nuclear is counterproductive and only leads to dependence on gas and increased CO2 emissions

2 Nuclear is an industrial asset for Europe

- According to a recent Foratom study (https://www.foratom.org/press-release/investing-in-low-carbon-nuclear-generates-jobs-and-economic-growth-in-europe/) nuclear accounts for:
  - **1,1 million jobs**
  - **€9.3 billion in annual investments**
  - **€4.3 Bn in EU GDP**.

"If Europe is serious about decarbonising its economy by 2050, then one quarter of the electricity produced in the EU will need to continue to come from nuclear" – Yves Desbazeille, Foratom

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The EU is not yet geared for the future of its nuclear industry

Europe must adapt its regulatory environment to the benefits of nuclear it has itself promoted

- CO2 pricing
- Electricity market rules must account for long-term investment in de-carbonised power generation
- Access to Capital through sustainable finance must not forget nuclear
- A wrong-headed priority: attempts at modifying the EURATOM treaty

Political grandstanding has hampered the creation of an environment favorable to nuclear. Like-minded countries should co-ordinate more closely to improve the current regulation.

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Challenges of the nuclear cycle

1 Access to uranium: long-term security of supply is not threatened

- Diversified sourcing in comparatively safe geographic sources
- Local inventories of depleted uranium serve as strategic reserves

2 Uranium transformation: keep European independent capacities

- Europe has the strategic advantage of having its own conversion and enrichment capacities
- A sufficient backlog must be maintained to preserve this strategic asset

3 Back-end solutions: the nuclear industry manages all externalities, but some issues remain

- Dismantling and decommissioning: closer legal regimes between European countries would make the disposal of end-of-life facilities easier (ie liberation threshold)
- Disposal of final waste: no significant cost difference between cycle options, but a need to accelerate implementation in some countries
- France chose the closed cycle model as offering more guarantees for future generations

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