Recent Developments Related to the Inclusion of Nuclear Energy:
EU Taxonomy of Sustainable Economic Activities

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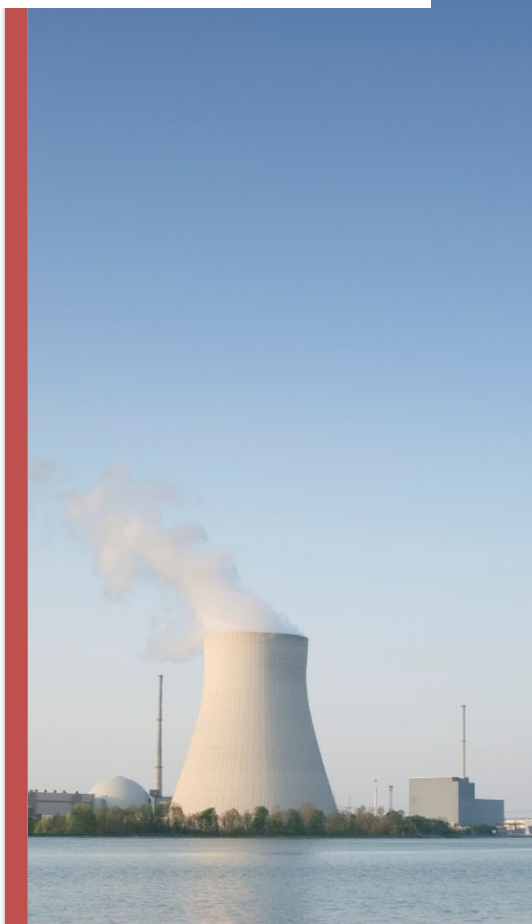
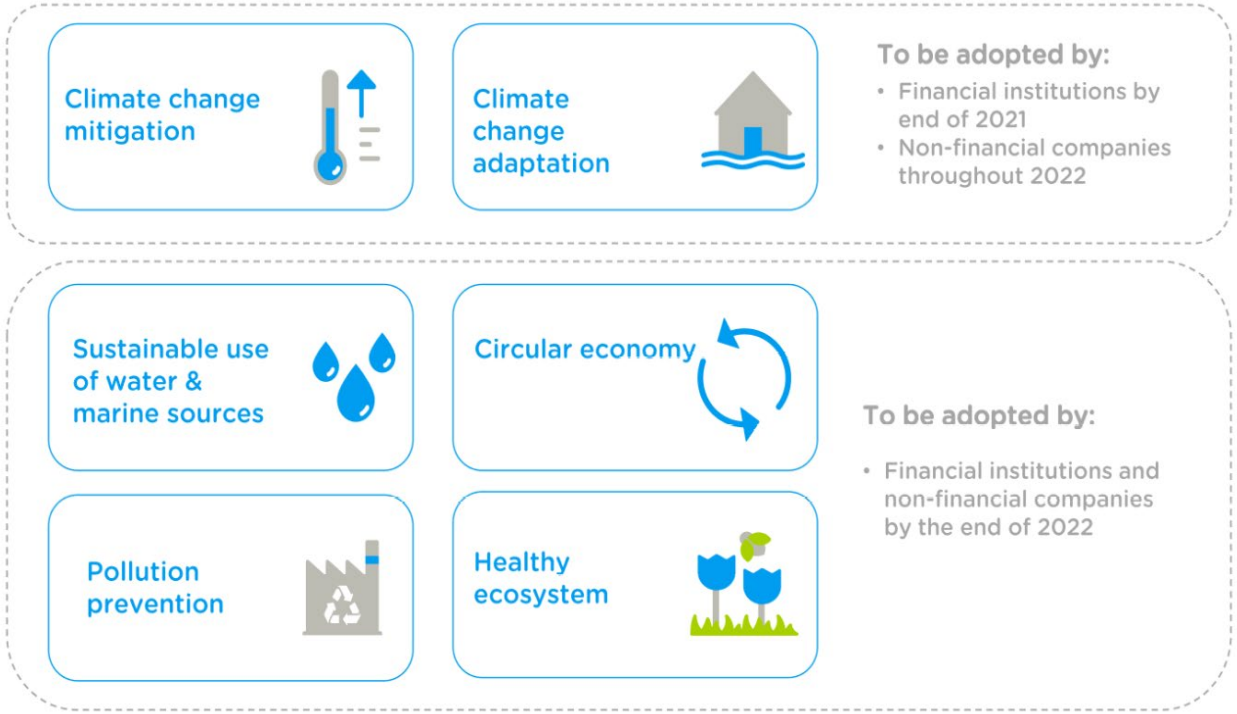
CIL Webinar on Nuclear Energy, Climate Change & Sustainable Development: Developments in Europe

October 22, 2021



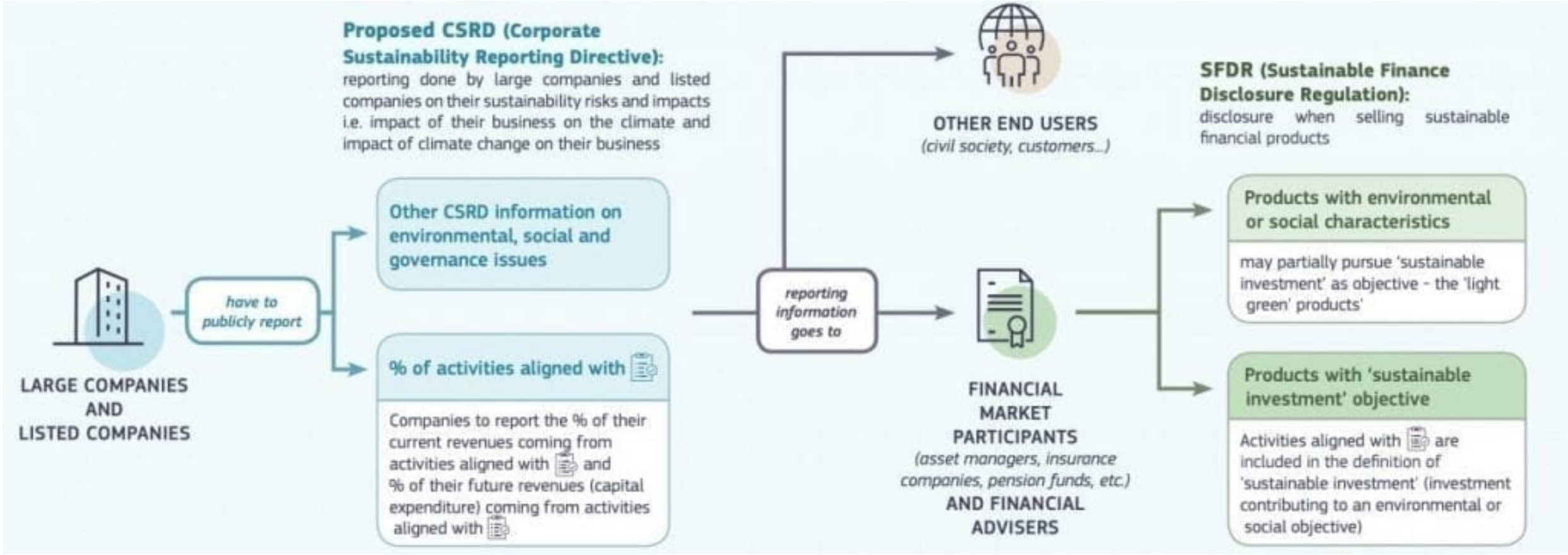
What is the EU Taxonomy Regulation

- **Objective:** channel public and private finance to sustainable activities to facilitate the energy transition
  - Sets out the parameters for determining what activities can be classed as environmentally sustainable.
  - An economic activity must meet the following conditions to qualify as sustainable:
    - contribute substantially to one or more of the six environmental objectives set out in Article 9 of the Taxonomy Regulation
    - "do no significant harm" (DNSH) to any of the other environmental objectives set out in Article 9
    - be carried out in compliance with social safeguards set out in the Taxonomy Regulation; and
    - comply with technical screening criteria established by the European Commission through Delegated Acts



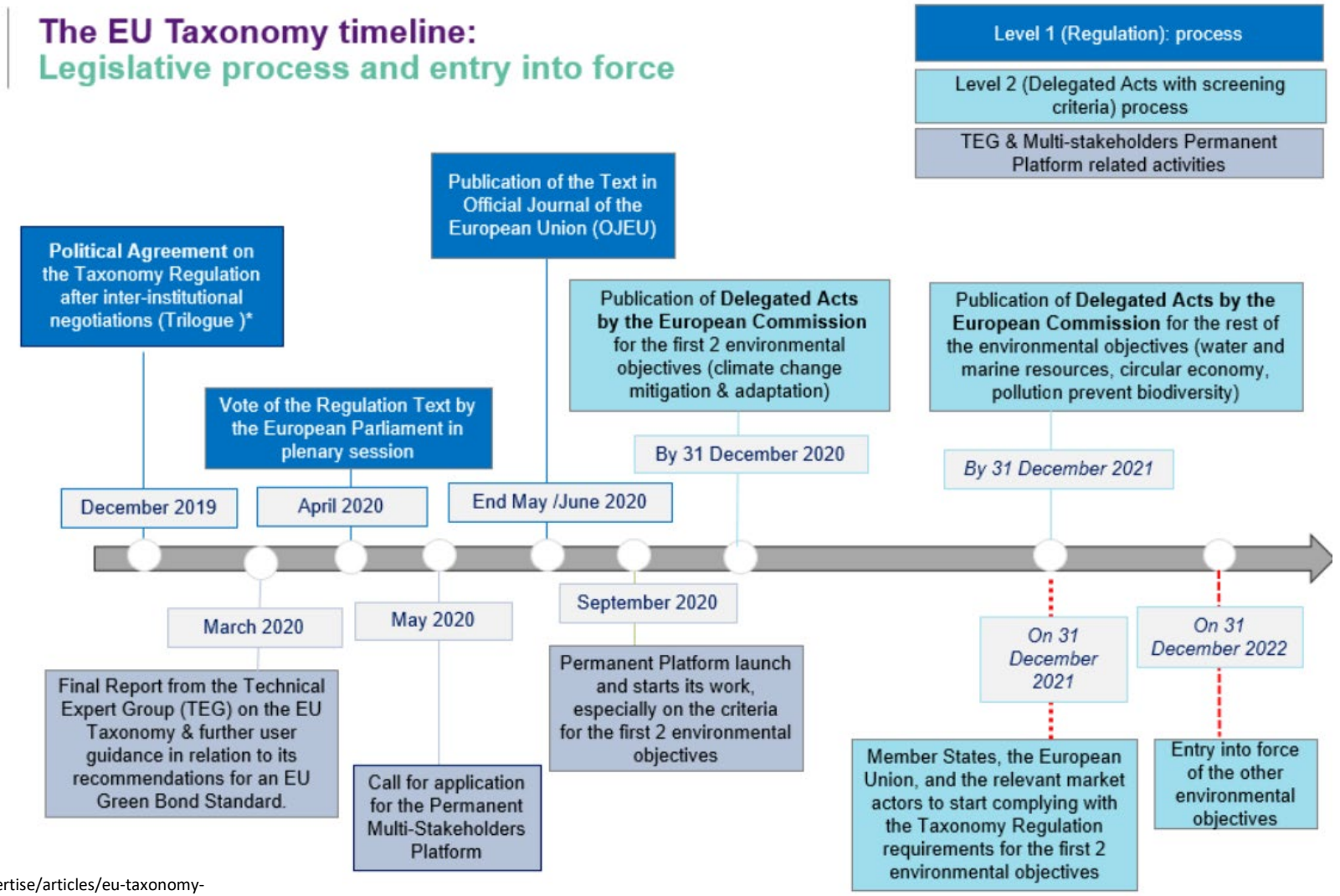
Source: Ramboll

Impact of EU Taxonomy



Source: PowerMag -- https://www.powermag.com/reprieve-for-nuclear-gas-in-eus-sustainable-finance-taxonomy-rules/

EU Taxonomy Timeline



Source: Natixis
https://gsh.cib.natixis.com/our-center-of-expertise/articles/eu-taxonomy-reminder-on-who-what-and-when

Process for Inclusion of Nuclear in EU Taxonomy

2019-2020

EU Taxonomy Development

- In December 2019, the European Parliament and the Council reached an agreement on the Establishment of Framework to Facilitate Sustainable Investment – "Taxonomy Regulation"
- Objective: Enable the EU to meet its 2030 climate and energy targets, consistent with the EU's "green visions" for a carbon-neatual economy.
- Requires large EU "public interest" companies to report on alignment between investment and sustainability.

Dec. 2020- March 2021

Referral to Joint Research Centre

- EC requests the JRC to draft a technical report on the "do no significinat harm" aspects of nuclear energy.
- March 2021: JRC determins that nuclear energy is environmentally sustainable.

April 2021

EC Decision

- EC issues Delegated Act
- Nuclear energy and natural gas to be included in a complementary Delegated Act of the Taxonomy Regulation.
- The complementary Delegated Act will cover additional activies:
  - Argriculture
  - Certain Energy Sectors
  - Manufacturing Activities

June 2021

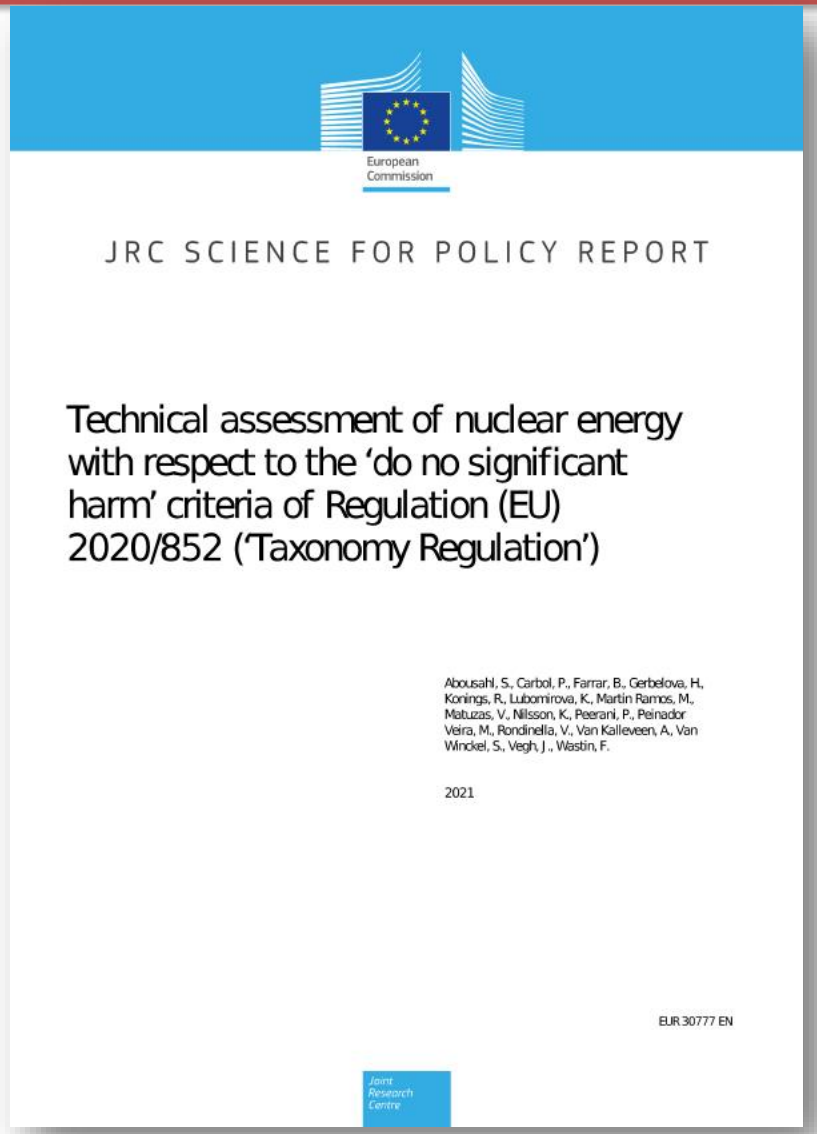
Referral to Euratom Article 31 Experts and SCHEER

- JRC report further reviewed by two additional expert groups.
- Euratom Article 31 Experts support the JRC report.
- SCHEER is skeptical of "do not harm" criteria and estimation of potential risks to the environment.

Joint Research Centre Report

- The JRC report compared the impact of various electricity generation technologies on human health and the environment.
- Report finding:
  - "**there is no science-based evidence that nuclear energy does more harm to human health or to the environment than other electricity production technologies already included in the EU Taxonomy as activities supporting climate change mitigation**"
  - Based on the recent full life-cycle analysis, the impact of nuclear energy is comparable with hydropower and renewables with respect to non-radiological effects
  - Broad scientific and technical consensus that EU's radioactive disposal strategy is safe

The JRC's *"do no significant harm"* evaluation of nuclear energy determined that nuclear energy qualifies as an environmentally sustainable energy source that does not harm the EU's environmental objectives.



April 2021: First EU Taxonomy Delegated Act

- covers **technical criteria** for activities that qualify as contributing to climate change mitigation and climate change adaptation
  - Annex I – Criteria for determining conditions under which an activity qualifies as contributing to climate change mitigation
  - Annex II – Criteria for determining whether an activity qualifies as contributing to climate change adaption
  - Both Annexes address criteria for determining significant harm to Article 9 environmental objectives
  - Each Annexes covers a broad panoply of activities, including manufacturing, energy, transport, etc.
- **did <u>not</u> address nuclear energy**
  - EC stated that a Complementary Delegated Act(s) will include nuclear energy and natural gas

EUROPEAN COMMISSION

Brussels, 4.6.2021
C(2021) 2800 final

COMMISSION DELEGATED REGULATION (EU) .../...

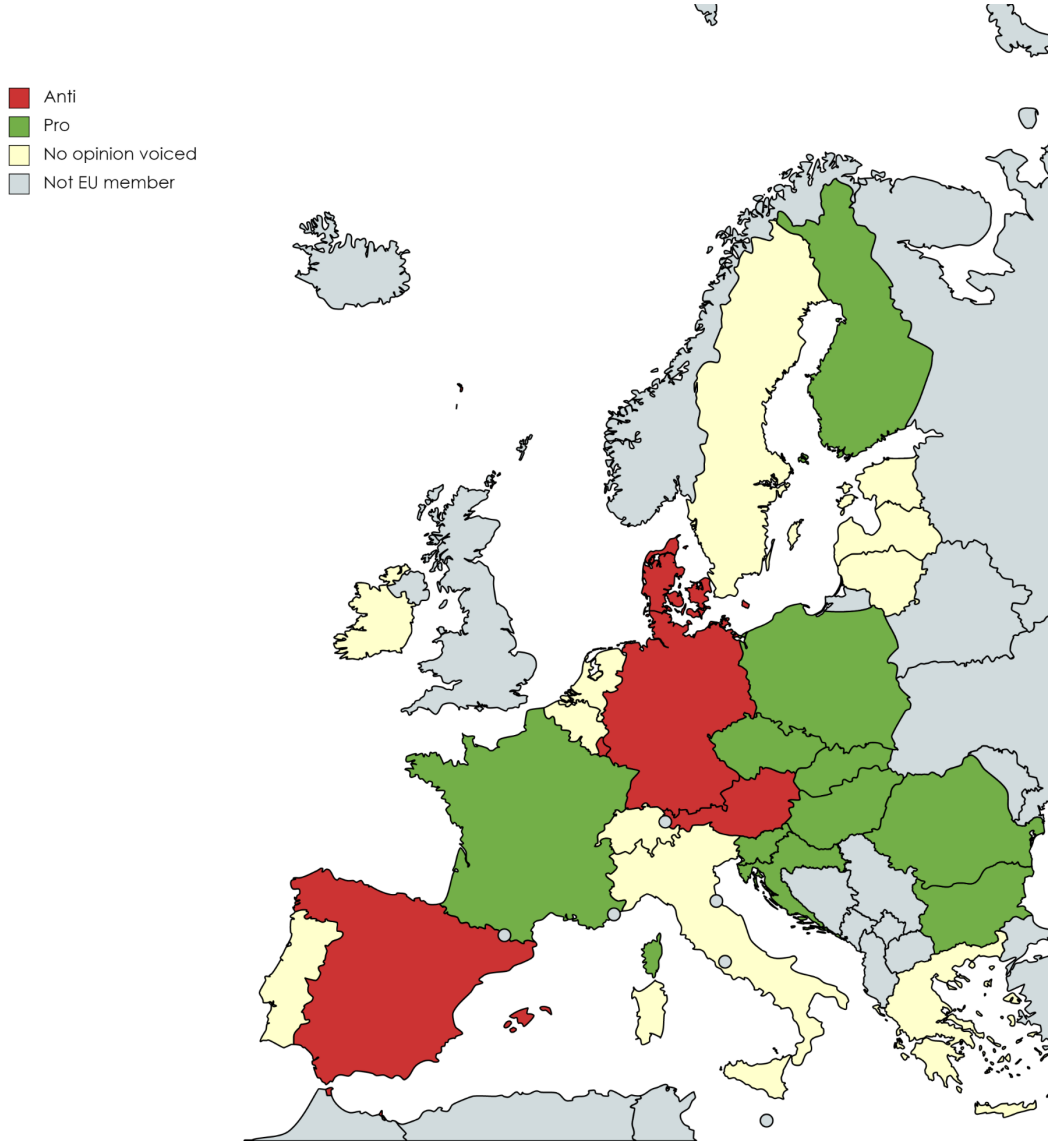
of 4.6.2021

supplementing Regulation (EU) 2020/852 of the European Parliament and of the Council by establishing the technical screening criteria for determining the conditions under which an economic activity qualifies as contributing substantially to climate change mitigation or climate change adaptation and for determining whether that economic activity causes no significant harm to any of the other environmental objectives

(Text with EEA relevance)

{SEC(2021) 166 final} - {SWD(2021) 152 final} - {SWD(2021) 153 final}

EU Members' Stance on Inclusion of Nuclear in EU Taxonomy



July 5, 2021: Group of five EU states led by Germany send letter to EC asking for nuclear energy to be excluded from taxonomy.

July 27, 2021: 18 trade unions in the energy sector from 10 European Union countries send letter to EC, urging to nuclear to be included.

11 October 2021: Energy and economy ministers from ten EU member urge inclusion of nuclear in taxonomy in article published in several European newspapers.

Countries with no official stance:

- *Sweden* – Greens not supportive, but unions and industry are pro
- *Estonia* – looking at SMR option, may join nuclear coalition
- *Netherlands* – looking at SMR option
- *Ireland* – nuclear ban, but 18for0 coalition urging look at nuclear
- *Italy* – generally anti, but polls show Italians increasingly interested in nuclear
- *Belgium* – seeking to phase out nuclear by 2025

Euratom Article 31 Experts Group

- **Article 31 Experts Group:**
  - Group of independent radiation protection and public health experts is attached to the European Commission to help the EU make decisions concerning radioactivity.
  - Members are appointed by the Scientific and Technical Committee, referred to in the Euratom Treaty Article 31, and for a duration of 5 years.
- **Key Findings:**
  - European Legal Framework provides an adequate system of protection of workers, the public, and the environment.
  - Euratom legislation provisions regarding protection of humans against harmful effects of ionizing radiation meet the standard of the International Commission on Radiological Protection and the IAEA.
  - Agrees with the JRC report conclusion that deep geological repositories (DGR) are considered safe and appropriate to isolate spent fuel and other high-level waster.

SCHEER Review of JRC Report

- **SCHEER:** provides Opinions on questions concerning health, environmental and emerging risks.
- **Key Findings:**
  - Findings and recommendations of JRC report with respect of the non-radiological impacts are comprehensive
  - Comparing Nuclear Power Plants (NPP) to other energy generating technologies *"do less harm"* criteria is different than "do no significant harm."
  - Dependence on an operational regulatory framework is not in itself sufficient to mitigate these impacts.
  - The JRC report's statement on the impact of radiation on the environment is simplistic.
    - It does not allow estimation of the potential risks to the environment regarding protection of water, marine resources, and biodiversity


European Commission

Scientific Committee on Health, Environmental and Emerging Risks

SCHEER

SCHEER review of the JRC report on *Technical assessment of nuclear energy with respect to the 'do no significant harm' criteria of Regulation (EU) 2020/852 ('Taxonomy Regulation')*

Scientific Committees

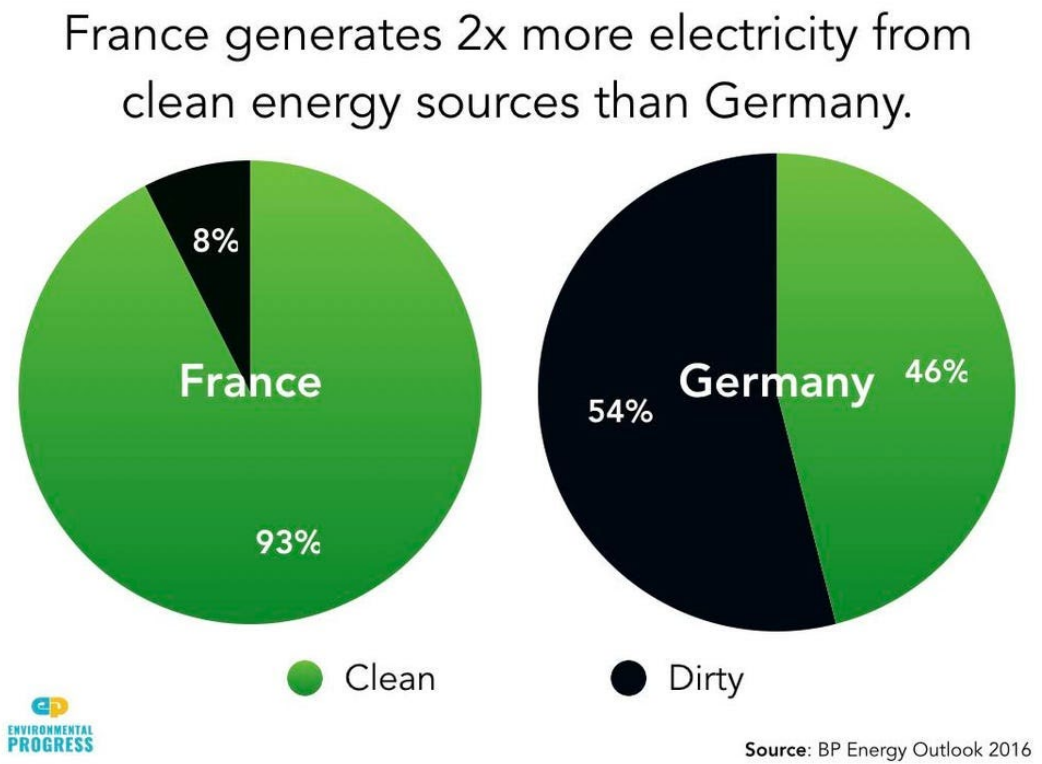
on Consumer Safety

on Health, Environmental and Emerging Risks

The SCHEER adopted this document by written procedure on 29 June 2021.

Next Steps: Political Decision on a Scientific Issue

- Battle of France v. Germany
- Understanding that decision of nuclear will await results of German election
- Nuclear plants have insulated France from the energy crisis
  - Macron up for tough election in 2022 for a second 5-year term
  - Announced last week €30 billion investment plan to ramp up tech innovation and heavy industry – includes €1 billion in SMRs

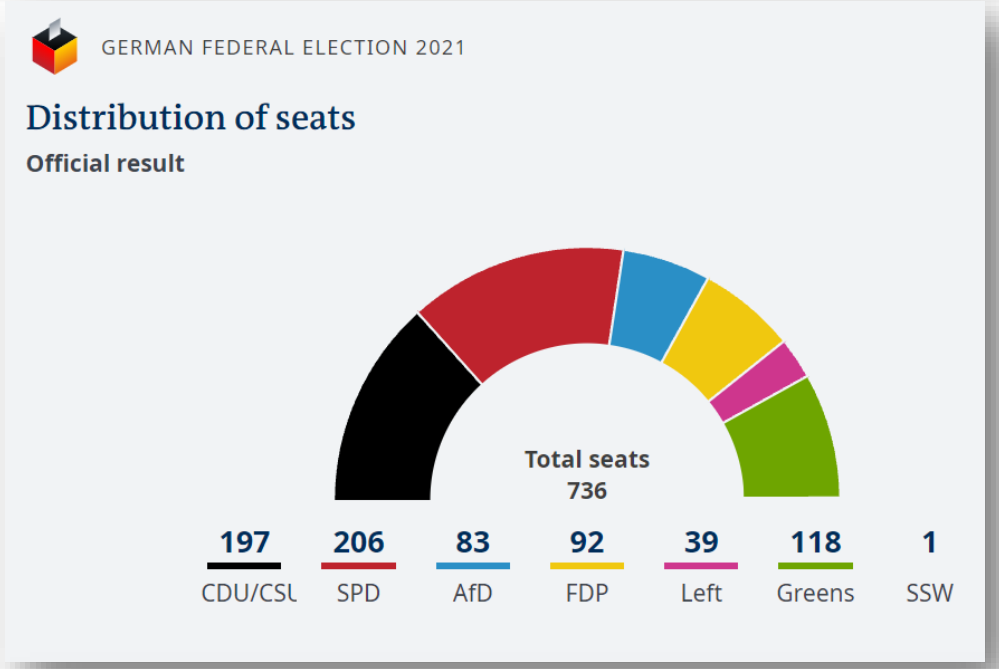


2021 German Federal Election

Party	Characterization	Stance on energy / climate change	Preferred coalition partner
Christian Dem. Union (CDU) + Christian Social Union (CSU)	Merkel's party. Center-right; support free-market economy and social welfare programs.	Call for "efficient market-economy tools" to meet the Paris climate goals, but support nuclear phase-out.	FDP
Social Democratic Party (SPD)	Party of the working classes and the trade unions	Supported nuclear phase-out. Target of generating all Germany's electricity from renewable sources by 2040.	Greens
Greens	Environmental protection-focused	Support European nuclear-phase out. End all support to nuclear power.	SPD
Free Democratic Party (FDP)	Neo-liberal, pro-free market party. "King-maker)	Pledge to extend emissions trading as the main tool for fighting climate change. Pro diverse tech, including CCS. Stance on nuclear unclear.	CDU
Left	Focus on stronger market regulation and more social investment	Nuclear power plants to be shut down immediately. Support global nuclear phaseout.	SPD, Greens
Alternative for Germany (AfD)	Far-right populist party	Nuclear plants should be used for their full designed lifetime. Germany should collaborate on international nuclear research.	None

2021 German Federal Election Results

- With 25.7% of total votes, SPD emerged as the largest party for the first time since 2002.
- The ruling CDU/CSU, which had led a grand coalition with the SPD since 2013, recorded their worst ever result with 24.1%, a significant decline from 32.9% in 2017.
- The Greens achieved their best result in history at 14.8%
- FDP made small gains and finished at 11.5%.
- Greens and FDP likely kingmakers.
- New government is formed after the new federal parliament decides on a chancellor, but the process to get there can last for months after an election.



Germany's Energy Dilemma

- *Energiewende (Energy Transition)* – German policy to transition from fossil fuels to renewable energy
- Most Germans continue to support Energiewende, despite increasing concerns about prices, siting, and energy security.
- Renewable energy sources have not produced enough energy to close the gap left by nuclear and coal leaving the market.
- Carbon emissions have risen in Germany since the shutdowns of nuclear plants began.
- The energy shortfall is causing an unstable grid.
- Even as Germany aims to become more energy independent by producing renewables, it is still too dependent on other nations to supply its other energy sources.


Climate

German greenhouse gas emissions to grow by largest amount since 1990

The estimated rise in greenhouse emissions in 2021 may even exceed the increase after the 2009/2010 economic crisis

Vishwam Sankaran | Monday 16 August 2021 11:48 | 3 comments

Importance of inclusion of nuclear in the EU taxonomy

- Potential impact on national policy towards existing and new nuclear
- Directly affects large and listed companies (reporting obligations)
- Directly affects companies in the financial sector
- Indirectly affects consumers
- **Potentially sets a model for other taxonomies**

Taxonomy	Categorization of Nuclear Energy
Russia National Taxonomy of Green Projects. Developed along the lines of EU Taxonomy, but considers specifics of the Russian economy.	Included as sustainable
People's Bank of China (PBOC) 2015 Green Bond Catalogue.	Included as sustainable
China's National Development and Reform Commission (NDRC) 2016 Green Bond Catalogue regulating corporate bonds	Included as sustainable
UK Green Financing Framework. Sets out the basis for identification, selection, verification and reporting of the green projects eligible for finance from the green gilt programme and savings bonds.	Not included, but "government recognises that reaching net zero emissions will require all energy to be delivered to consumers in zero-carbon forms and be derived from low carbon sources."
Bangladesh Bank Guidelines on Environmental & Social Risk Management (ESRM) for Banks and Financial Institutions in Bangladesh	Guidelines address general environmental and social impacts, technology neutral.

QUESTIONS?

Thank you for your attention

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