

The Energy Transition in a COVID Altered World

Governing the Energy Transition: Between Momentum and
Convergence of Crises

The Energy Futures Point of Inflexion: Re-nuclear with Health Assurance

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Literature support: Why point of inflexion:

Impact analysis, grid
dynamics (Werth, et al,2021).

RE-nuclear safety is prime (Sims, et al 2003).

Point of Inflexion:

carbon capture and usage enables
continuity of carbon emitting thermal
and gas-based energy

::::

RE-nuclear could be the savior that adds
a firewall of safety around nuclear
energy hazards

Transition to
Decarbonisation:

Complement rather
than duplicate:

Coherent policy that
empowers

Disaster vulnerability of safe renewable energy sources: Large hydro disasters #Michigan hydropower, #glacial burst at Chamoli avalanche decimated Tapovan hydro project, #Yangtse river topping straining Three Gorges Dam

Energy Transition: Nuclear with RE: Health assurance:

#GHG emissions two times lower # renewables near zero.

Momentum with Convergence: #retrofit #repurpose #rejuvenate

Given pandemic & slowdown: extend the lifetime of existing nuclear plants

Unprecedented levels of safety: feasible deep geological repositories

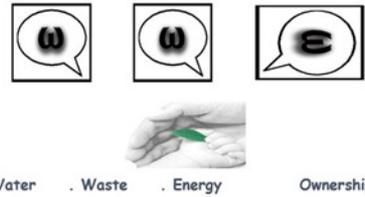
Transmutation: nuclear waste or plutonium

Modified nuclear reactors: improved safety; lower costs:

pebble bed modular reactor (PBMR):no physical process which could cause a radiation induced hazard; "core melt" scenario is therefore zero.



W.W.E_Own =
We_Own



proactive spirit of "We Own"

blended and aligned:
W W E_Own

Energy: RE (Renewable Energy) <> Nuclear

"feel-positive" leadership

spurs self-governance

Ethics & Good Governance

Health

Water Waste - Energy catastrophe lingers

Momentum: With the spirit of "We Own"

Pandemic Waste - Water - Energy (Carbon) exacerbation

Resilience

Convergence of crises

RE-nuclear is renewable safeguarded nuclear energy infrastructure

Momentum models

Nuclear energy and economic growth
RE Nuclear energy and economic growth

Endeavour to build back better

Literature support: Nuclear energy and economic growth (Kirikkaleli, et al 2021;

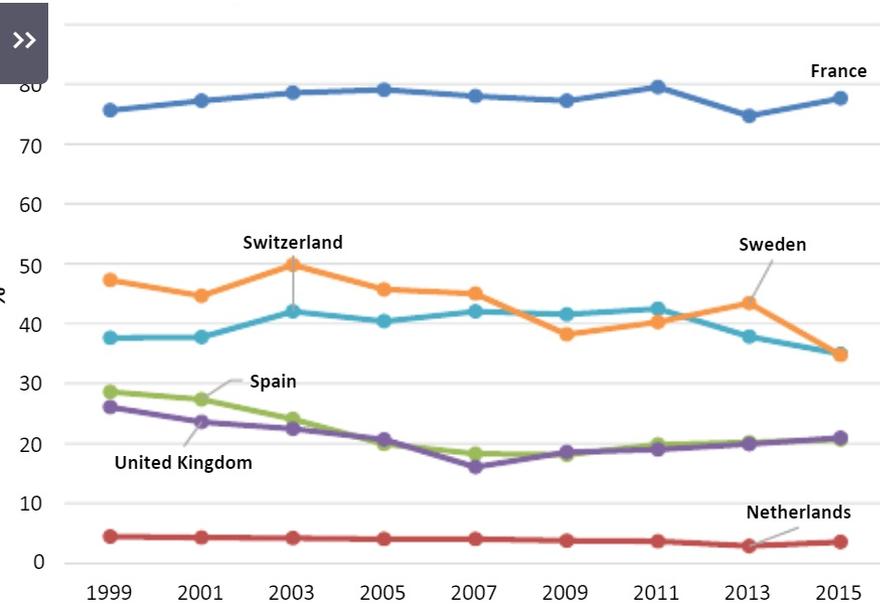


FIGURE 1 Energy from nuclear sources
Source: World Bank Development Indicators

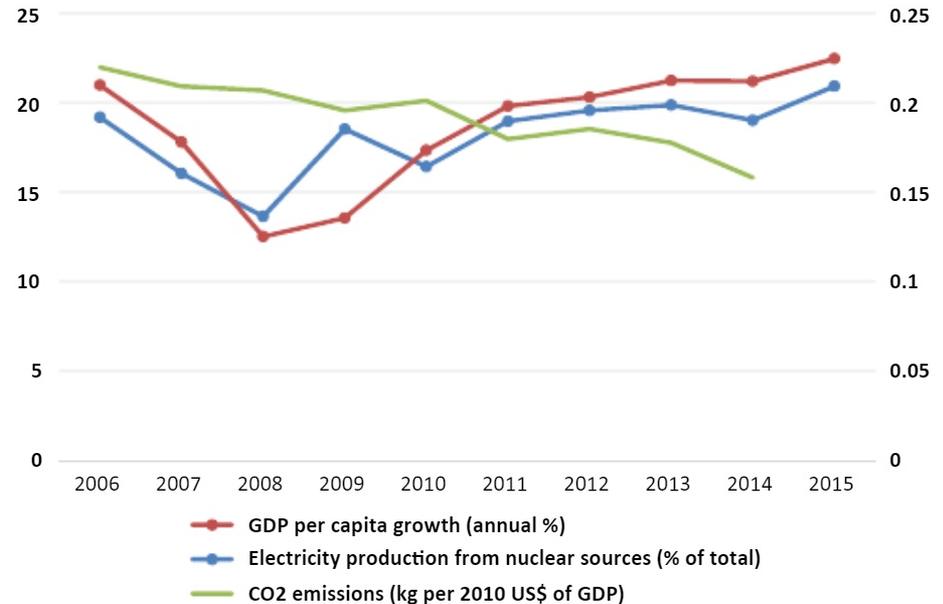
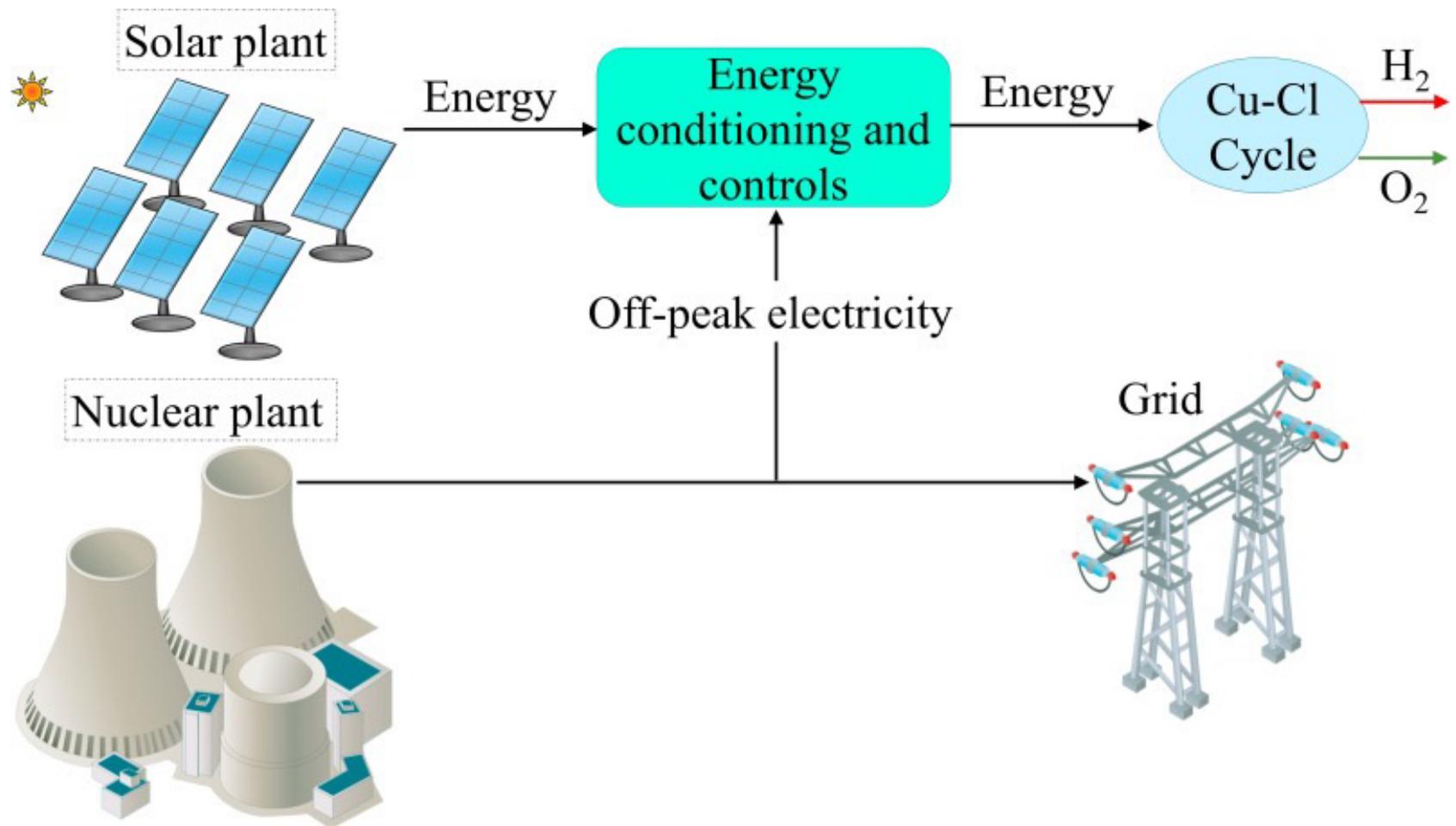


FIGURE 2 Nuclear energy consumption, GDP growth, and CO₂ emissions of the United Kingdom
Source: World Bank Development Indicator

Public Health: #repurpose #retrofit #rejuvenate Nuclear: share to gross power generation 17.46 percent in 1996 to 10.15 percent in 2018. (Schneider & Froggatt 2021)

RE as firewall: Spent fuel removal; Contaminated water cleansing; Renewables + Nuclear "bolster energy security"





Water . Waste . Energy Ownership

Ethics &
Good
Governance

Health

Water Waste - Energy
catastrophe lingers

Momentum:
With the
spirit of
"We Own"

Resilience

Convergence of crises

Endeavour to build back better

RE-nuclear is renewable safeguarded nuclear energy infrastructure

Inflexion transforms are layered

Sustainable energy

Continuity of coolant water to dissipate heat

economics, operating safety, proliferation safeguards and effective solutions to waste disposal
Proposition #2: Energy Consumption behavior; attitudes; includes work, leisure, services consumed
Proposition #3: Economy-wide utility sharing (energy, water, ...)

Attribute 1: Link non-declining well-being to non-declining comprehensive wealth
Attribute 2: Dynamically assess the natural, environmental and societal footprint ...

Climate Change

**Waste as a common denominator
With respect to energy security**

Trait 1: Best practices from developed/developing regions adapted
Trait 2: Trans-boundary resource, create value by collaboration, clusters
Trait 3: Environmental capital...

Characteristic 1: Human health capital
Characteristic 2: Renew / reuse / recycle potential
Characteristic 3: Beyond product/service life cycle, waste can extend value chain

Value proposition 1: W.W.E_Own *fulcrums'* (i) Climate-financed, (ii) Disaster-resilient, (iii) Community-centric Energy architecture:

(i) Climate-financed (ii) Disaster-resilient (iii) Community-centric Energy is hugely inter-dependent on water and waste (Bernard, 2015; Scott, Kurien & Wescoat, 2015).

For dynamic measurability of W.W.E_Own, a clear contours of a habitat is necessary with respect to Water ~ Waste ~ Energy.

Habitat or domain needs to span both urban and rural: *Rurbanization* for sustainable conduit water ~ energy ~ waste flows