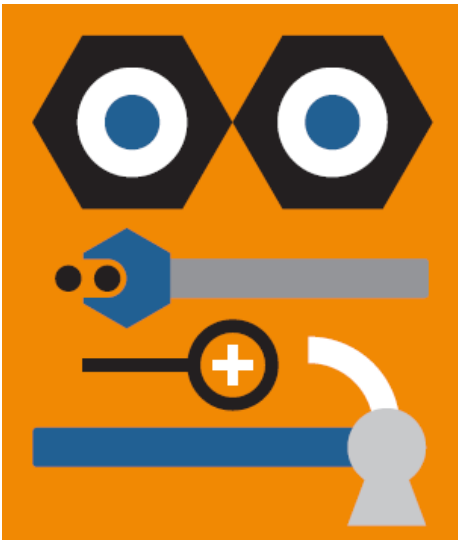






Enable Successful Transition Using Our Tools

Developed with and for use by our members







World Energy Issues Monitor: reality check - global, regional, national energy perspective on energy transition challenges




World Energy Scenarios: engage uncertainty as opportunity - global-, regional- and thematic-focused energy futures frames



Energy Policy Trilemma: policy pathfinding to balance security, equity & sustainability performance

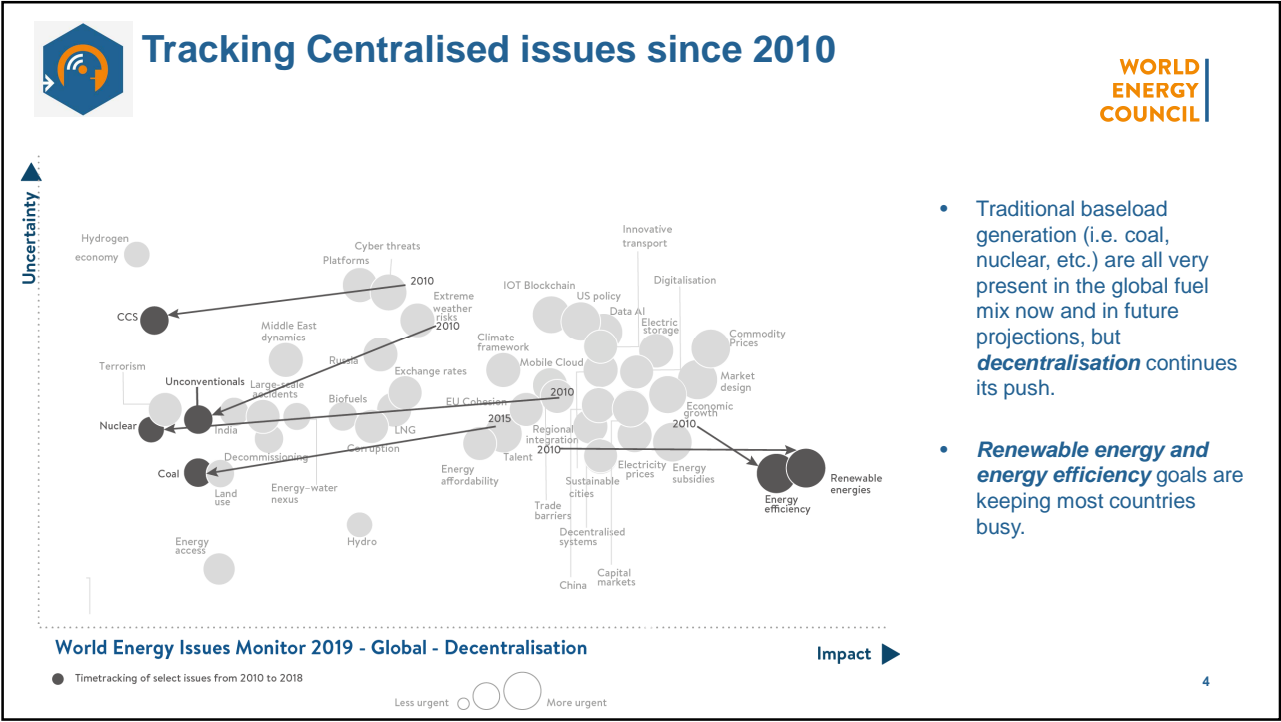
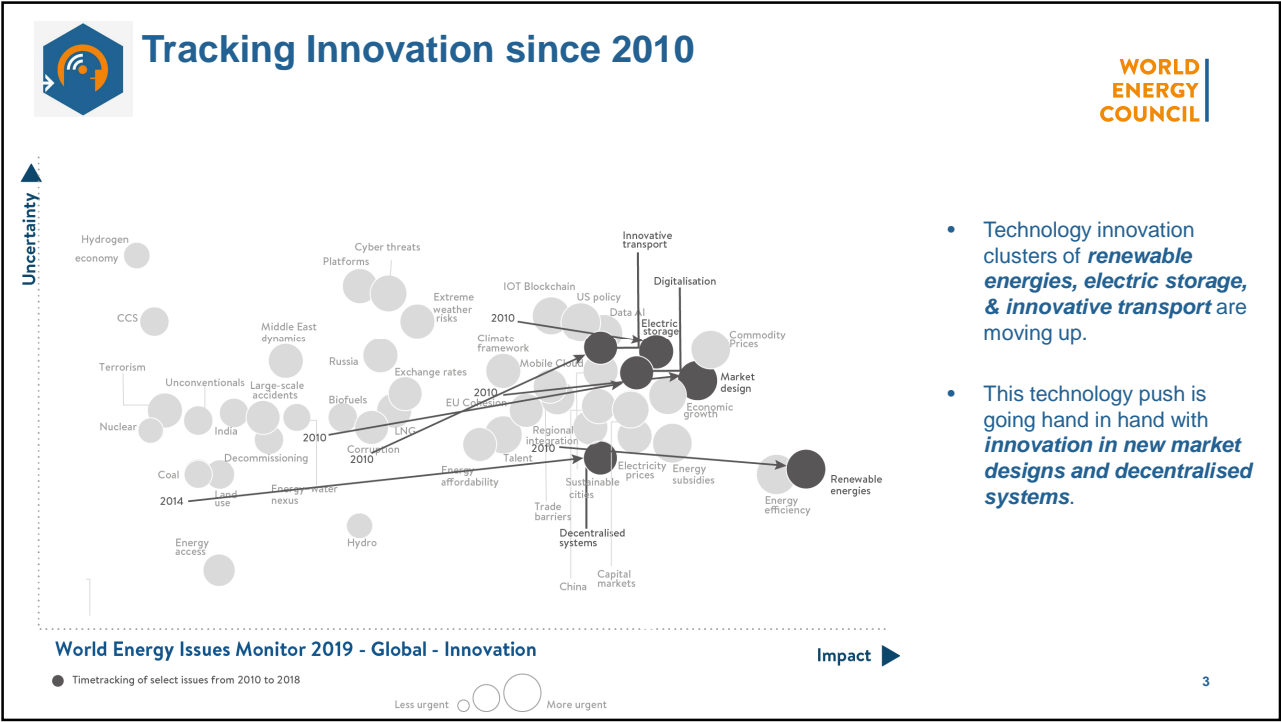


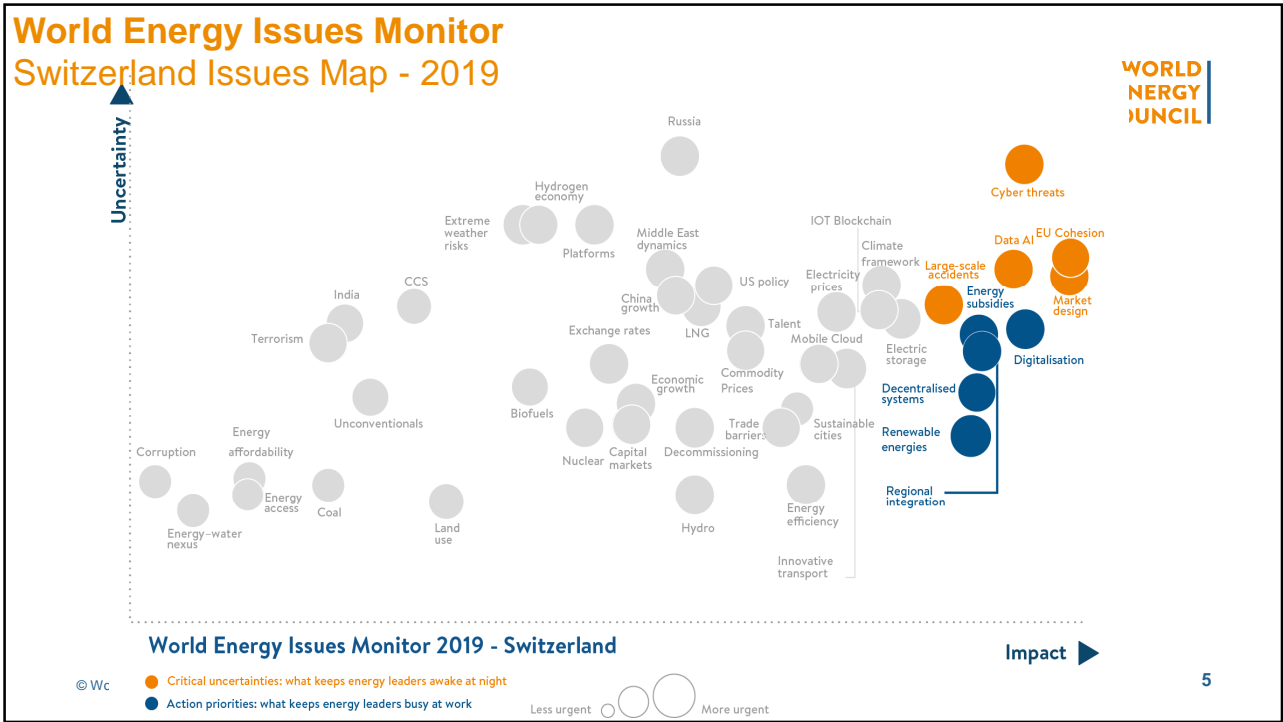
Innovation Insights: moving innovation from margins to mainstream & digging deeper into wide and fast shifting landscape



Dynamic Resilience: better prepared for emerging and systemic risks

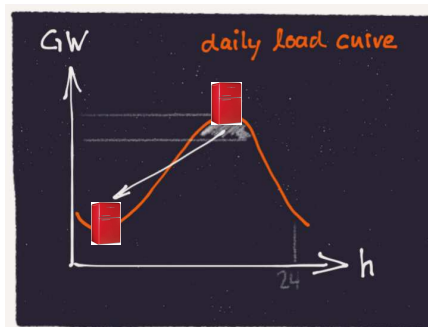
2





“uberisation in energy”

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Internet of things (IoT) in energy

automating transactions between large numbers of small devices

enabled by distributed ledgers / blockchain

has potential to deliver system services at scale

and thereby reduce physical infrastructure needs



electric StreetScooter
do it yourself DHL-style



INSIGHTS: Energy Trilemma Index

Pathways to energy access

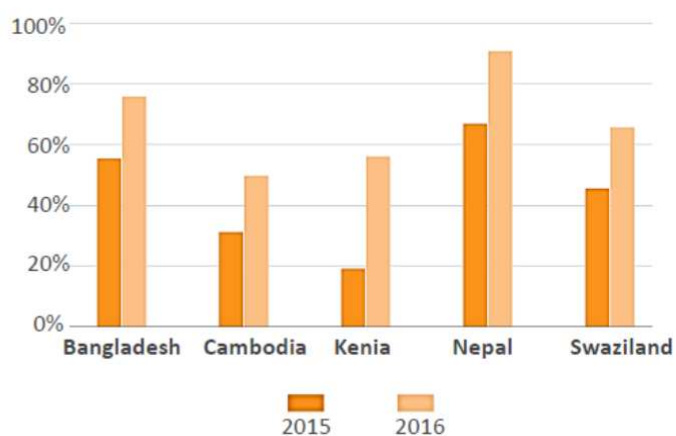
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Equity improves with access to electricity

There are different successful pathways:

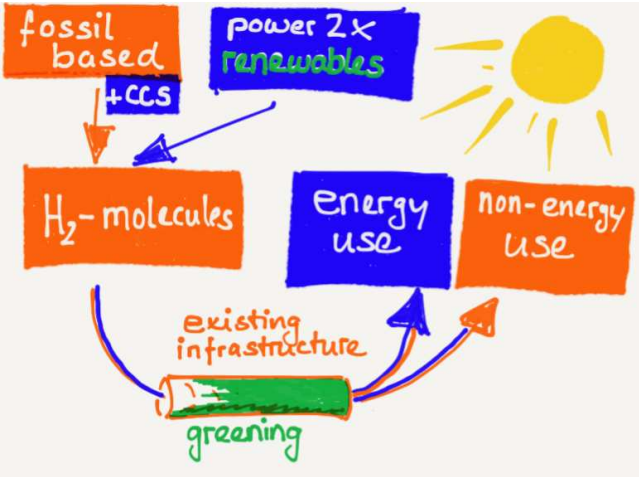
- Nepal, micro-hydro
- Kenya, rural access / household solutions
- Bangladesh, mini/micro grids/PV

POPULATION WITH ACCESS TO ELECTRICITY



No ‘all electric’ vision: Green molecules, building on existing supply chains

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green fuels from renewable electricity (power-to-X) include hydrogen, ammonia, methane, methanol, formic acid, diesel, gasoline, or kerosene

“power-to-X is a necessary element of the global energy transition” for storability, cost, availability and acceptability considerations due to reusing existing infrastructure [WEC Germany, frontier economics, 181018]

global trade is key for reasons of cost and resources availability

potential scale: today’s oil production is about equivalent to 2-3 times the electricity production in terms of energy

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Snapshot of the variety and diversity of potential PtX producing countries

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The initialisation of a global PtX market can be supported by complementing technologies such as

- “blue hydrogen” (hydrogen produced from steam reforming of natural gas with carbon capture and storage (CCS)); and
- and carbon capture from lower-cost sources (such as industrial emissions and biomass instead of direct air capture).

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Source: WEC Germany, frontier economics, 1810



**Energy realities are shifting.
Faster than ever.**

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- The D3 driven transition offers a unique opportunity to achieve more secure, affordable and clean energy for all.
- Electricity is the new oil. The digit is the new battery.
- However: The way to Trilemma heaven needs green liquids.
- 100% energy access can be achieved by 2030.

Act now.

 @WECouncil

 @chwfrei