



SMR

Rolls-Royce SMR

Ynni glân, fforddiadwy I bawb
Clean, Affordable Energy for all

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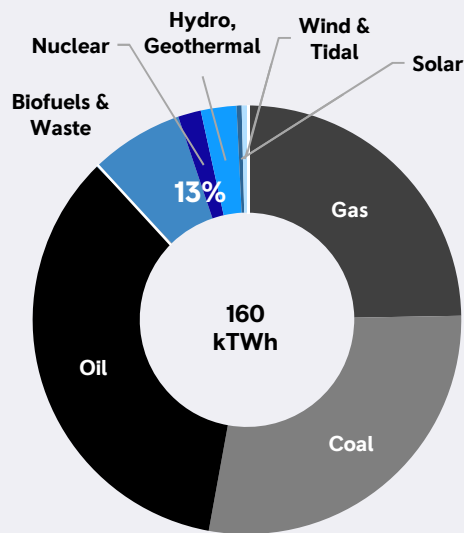
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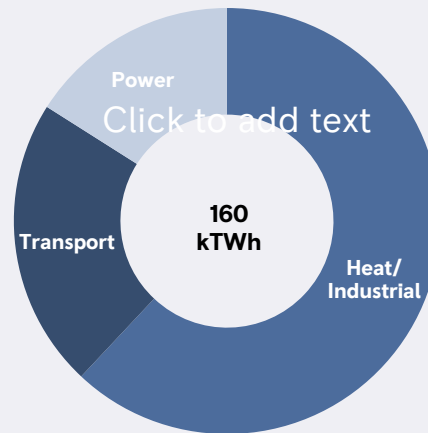
Tomorrow's energy market will look fundamentally different – and will need new solutions that can deliver low carbon power 24-7

Global energy by source



Only 13% global energy is low carbon today

Global energy by use



Key attributes

Rolls-Royce SMR

Design life	60 years
Scalability	1 unit = 470MWe Multiple units per site
Capacity factor	95%+
Security of supply	High
Emissions /MWh	Low
Land coverage / MWh	Low

Proven technology



Rolls-Royce has been **designing and manufacturing** nuclear power plants for submarines for **over 60 years**

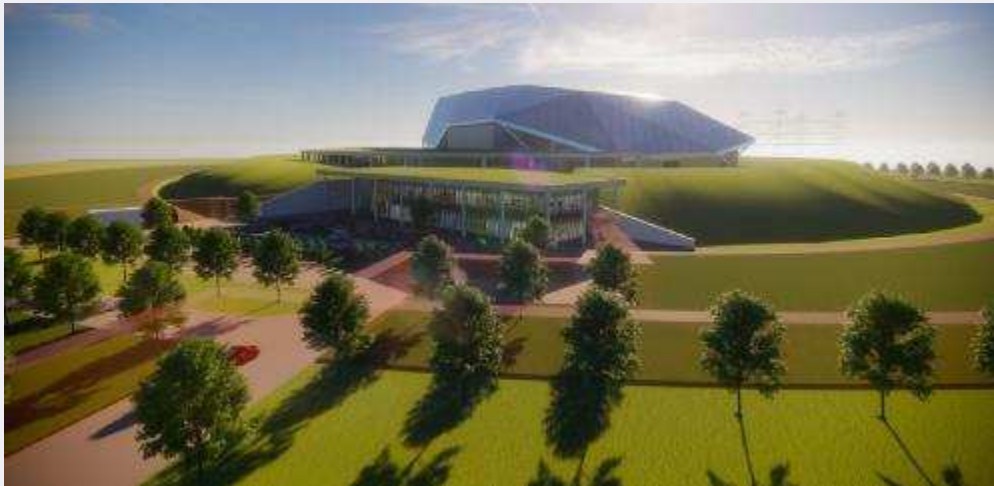
Latest Gen III⁺ of the Rolls-Royce **Pressurized Water Reactor (PWR)**





SMR

UK National Policy



ANT Fund £385m

Sizewell C £100m

Future Nuclear Enabling Fund £120m





SMR **Rolls-Royce SMR Ltd is a technology vendor offering a complete SMR power plant on a turnkey basis.**

Our development programme is fully funded with £490m through commercial equity and UK Government grant funding

Rolls-Royce SMR Ltd Shareholders



Rolls-Royce Group
60 years designing, manufacturing, supporting and operating nuclear technology



Constellation Energy Corp. (previously Exelon Generation Ltd)
Operates the largest U.S. fleet of zero-carbon nuclear plants with over 18.7 GW from 21 reactors at 12 facilities



BNF Resources UK Ltd
Extensive investments in the energy space and represented and advised by BNF Capital Limited, an FCA regulated UK-based investment advisory



Qatar Investment Authority
Invests in the energy transition and funds technologies that enable low carbon electricity generation

UK Government Grant Funding



UK Department of Business Energy and Industrial Strategy
Rolls-Royce SMR Ltd received the Low-cost nuclear (LCN) grant award by UK Research and Investment (UKRI)



SMR

Rolls-Royce SMR is a totally new way of building nuclear to meet **Net Zero** needs

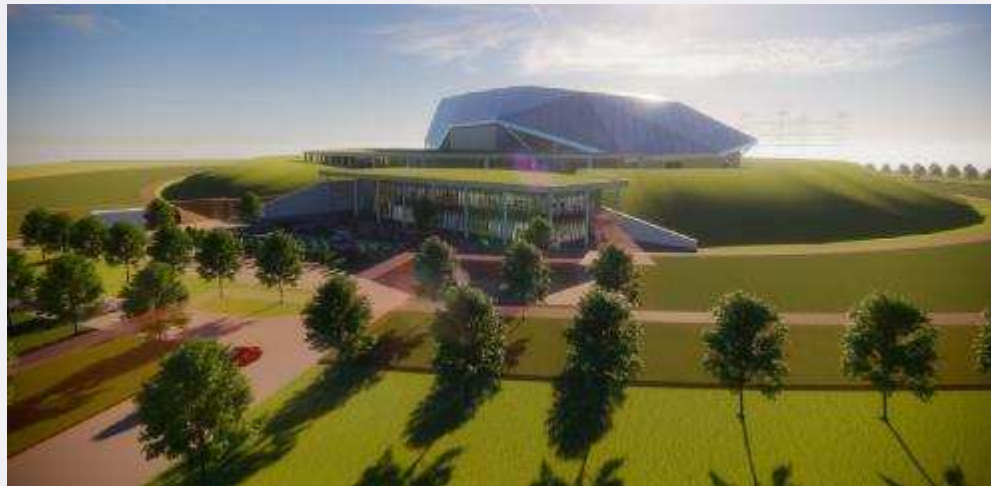
~470 MWe net output

50 Hz design

Proven PWR Technology & Standard Fuel

Power station turnkey delivery

4 yr on-site Construction (Fleet unit)



Enhanced safety and security

1st unit on grid early 2030s

Capital cost under £2bn

Adaptable, multi-use power & heat output

LCOE range £35-£50 per MWh**

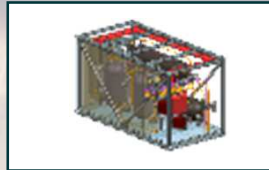




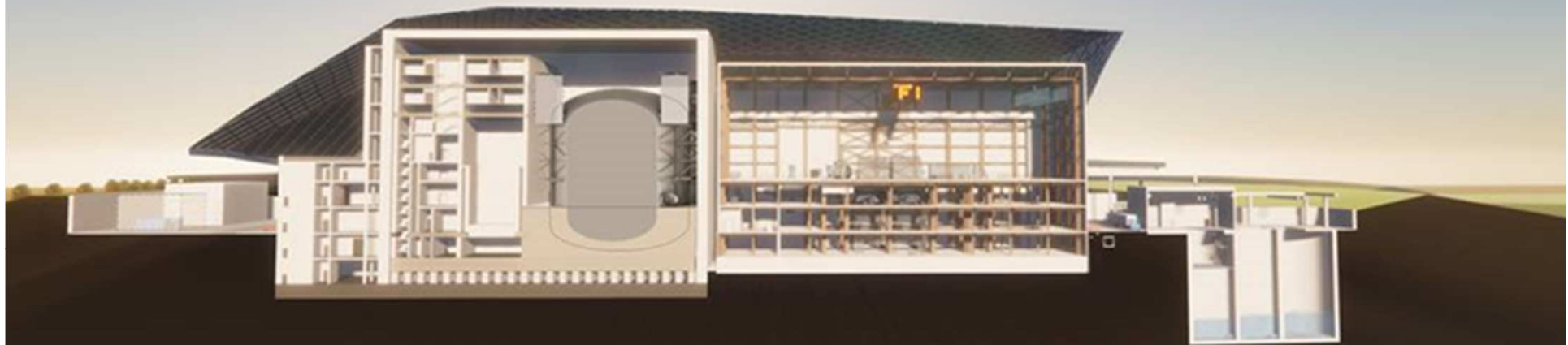
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A whole power plant approach focused on standardisation, repeatability, commoditisation

Whole plant modularisation



Standard commercial parts



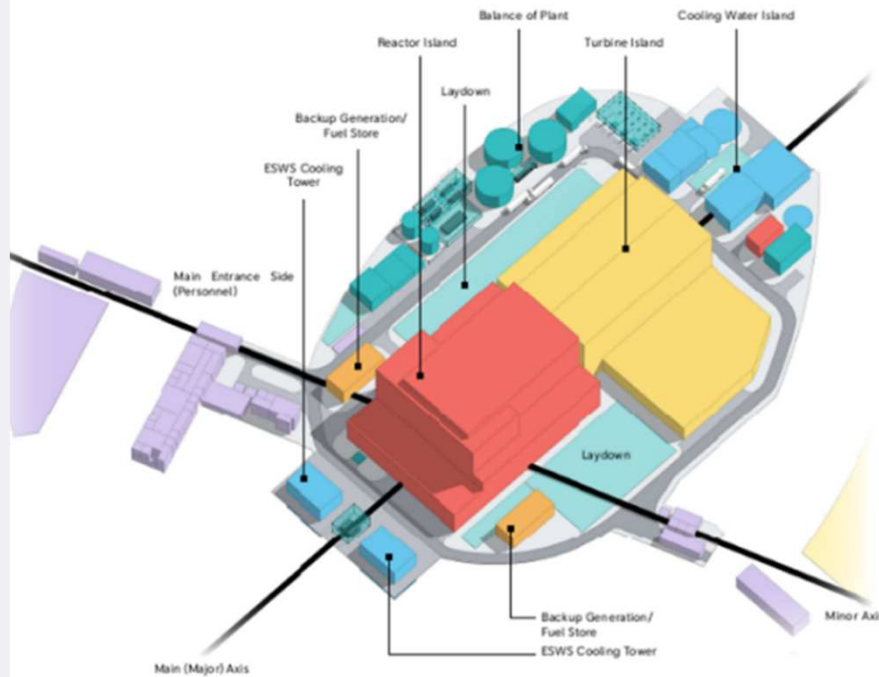
Reactor Island

Turbine Island

Cooling Water Island



SMR The Rolls-Royce SMR delivers 470MWe (net) in a compact site footprint



Standardized design

Primary Plant area: 0.049km²

Nr of modules: ~1600 (all road transportable)

Largest module: Reactor pressure vessel

Highly energy dense solution: ~3000MW/km²*

(Generated Power: Offshore Wind: ~2.25MW/km²; Solar:~9MW/ km²)**

* Assumes RR SMR operational plant @ 95% utilisation
** Assumes 50% wind utilisation rate & 20% solar utilisation rate





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**A factory fabricated product - Road transportability of modules is a pre-requisite
Modularisation of the whole power station, not just the nuclear island**

Module factories



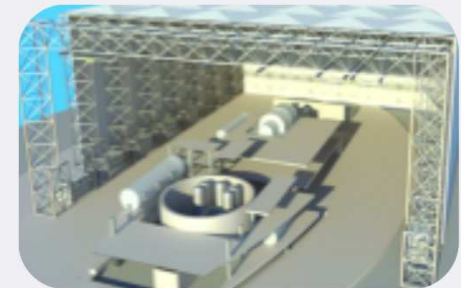
Primary modules



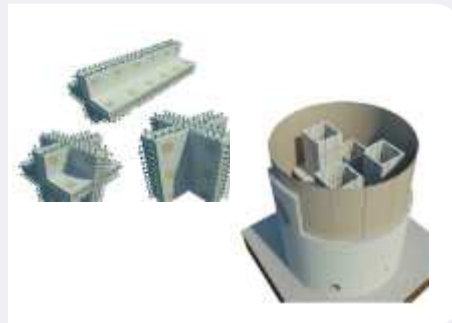
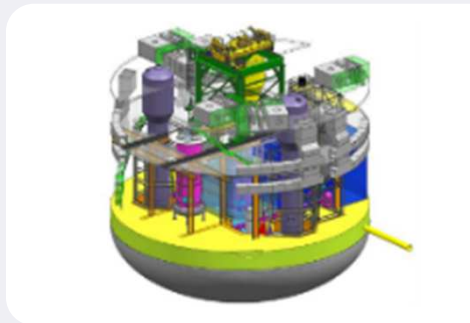
MEP modules



Civil modules

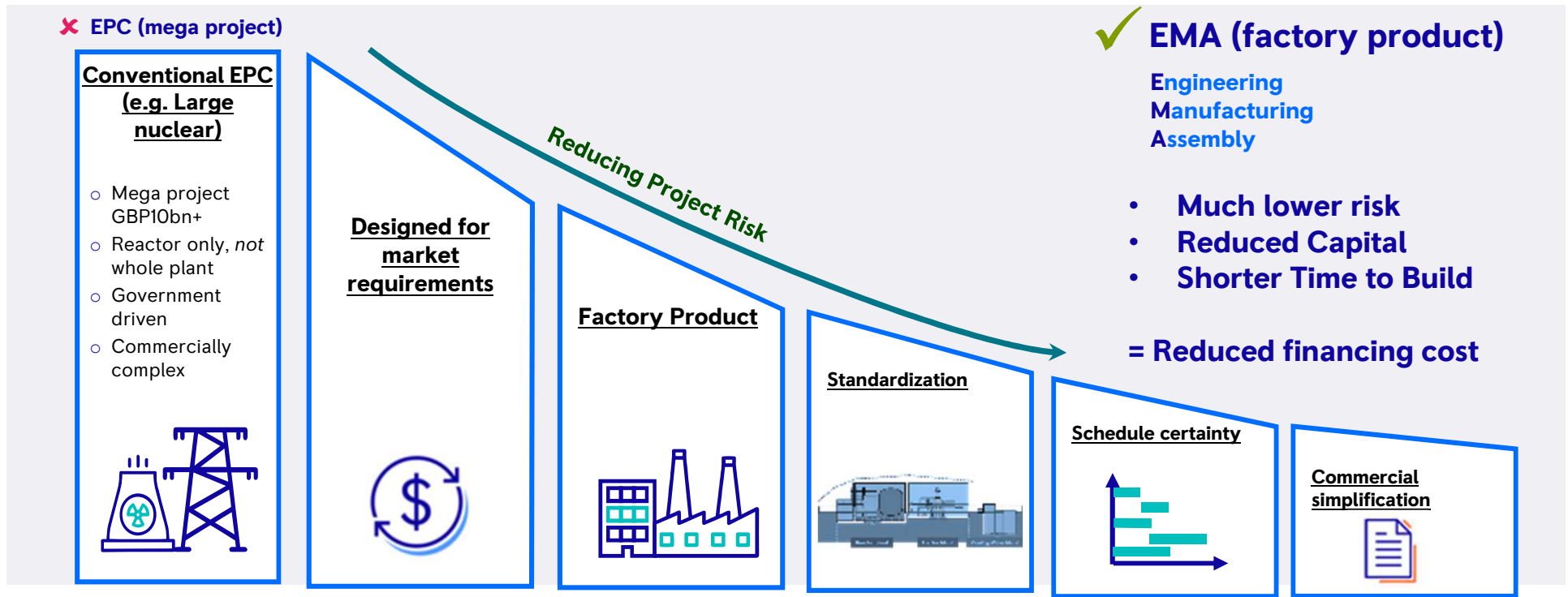


Site Assembly Factory





SMR Turning nuclear into a product not a one-off mega infrastructure project



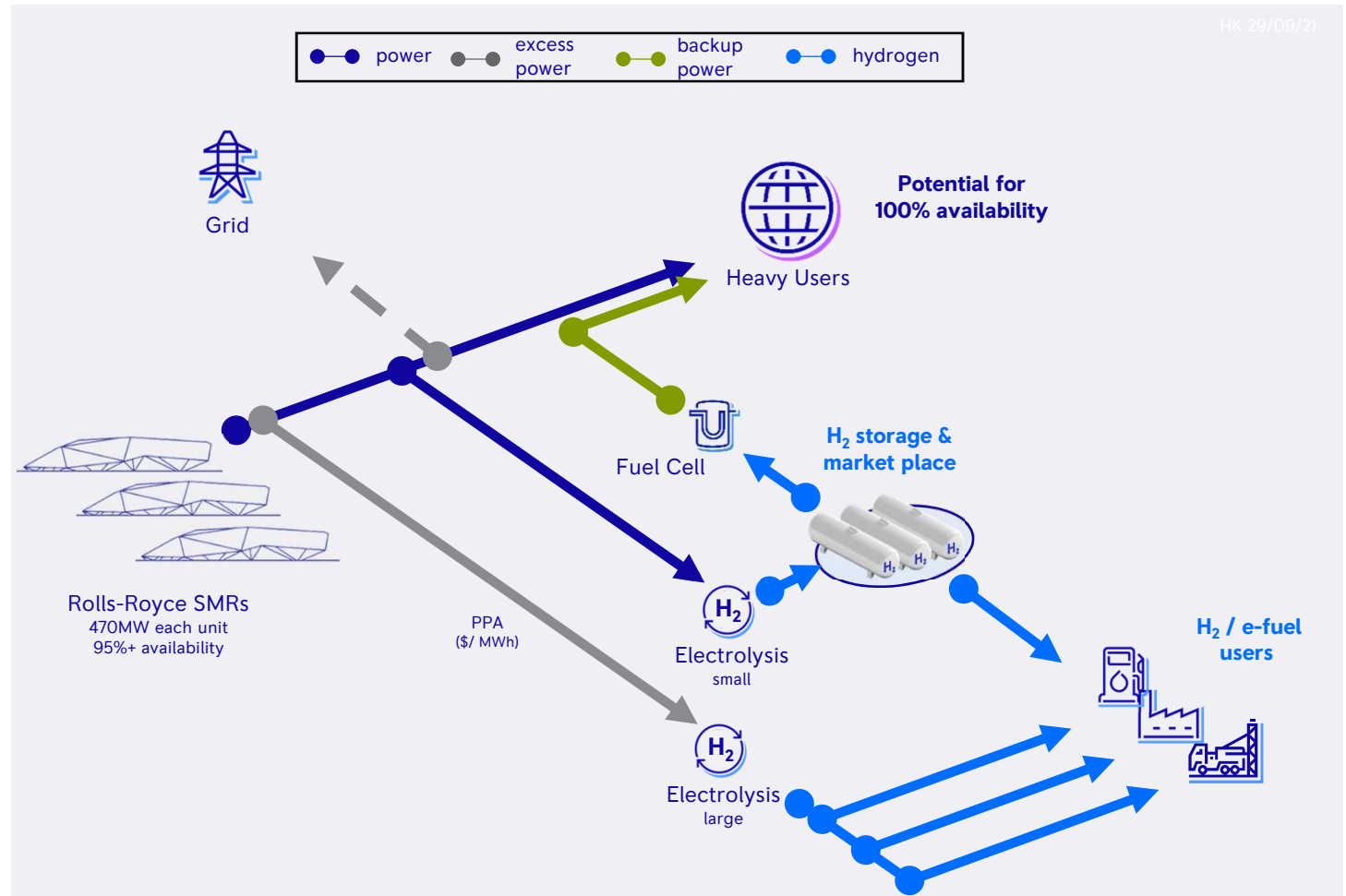


Energy Park

Rolls-Royce SMR's small footprint allows co-location: clean energy located with the industry that needs it

A magnet for industry and high skilled jobs desiring carbon free energy

Removes the need for costly transmission of electrical power over large distances



HK 29/09/21

