

Delivering Nuclear New Build: UK Case Study

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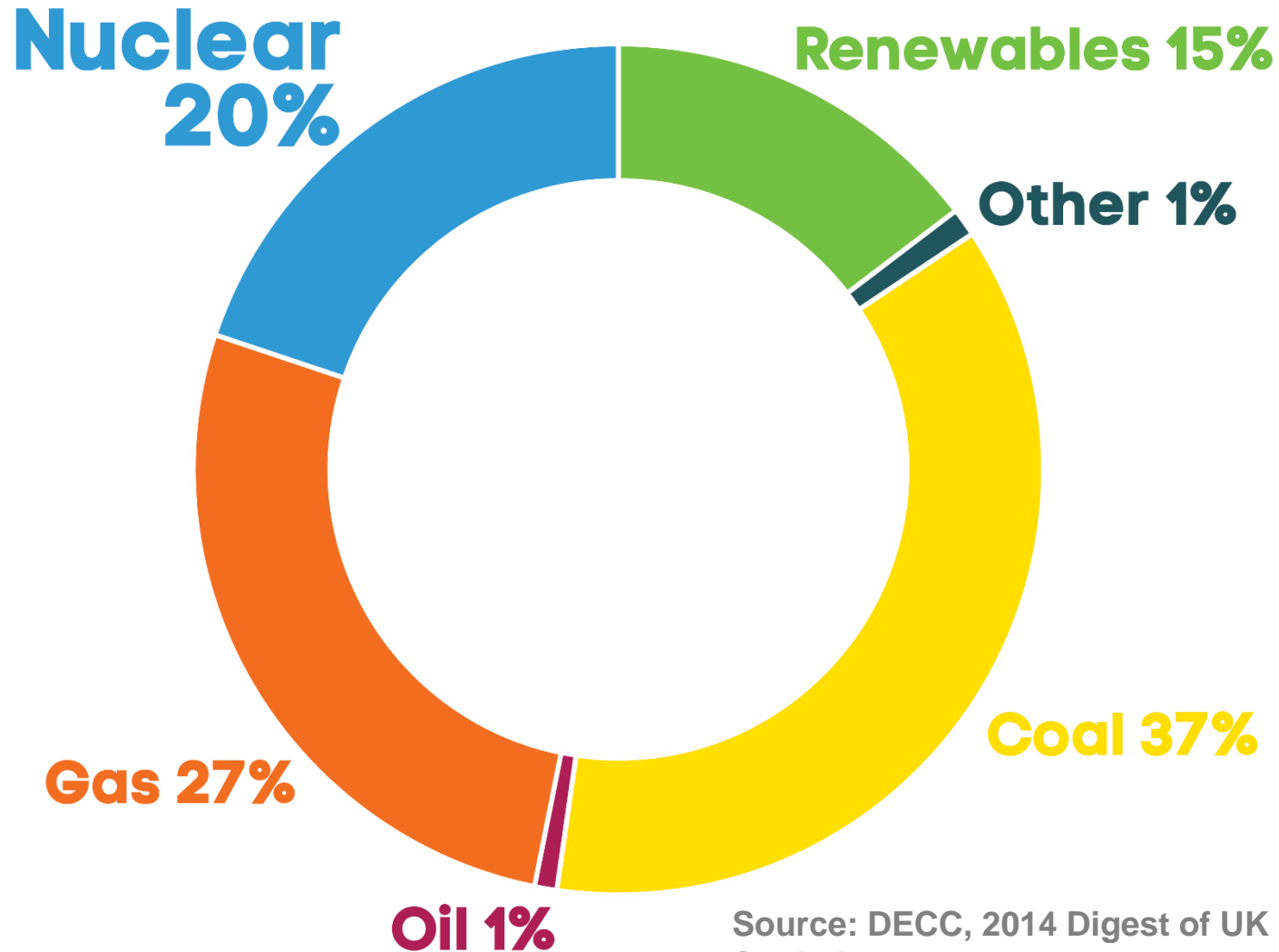
24 November 2015

About the NIA

- The voice of the UK civil nuclear Industry
- 280 members across whole nuclear sector
- Members range from utilities to small enterprises
- 55,000 UK nuclear workers



The UK electricity mix



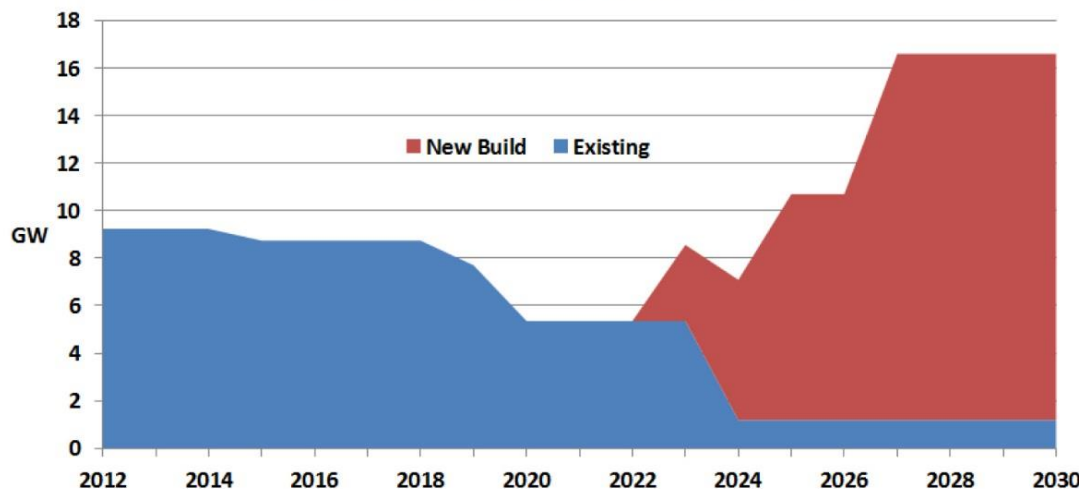
Source: DECC, 2014 Digest of UK Energy Statistics

Current UK nuclear generation and planned to 2030

- Sites currently generating
- *NPS sites with development in progress*
- *NPS Sites, no firm plans at present*



UK Nuclear Generating Capacity Forecast



Source: Department of Energy and Climate Change

New Build Plans for the UK



EDF Energy UK

Technology Choice - AREVA EPR

2 x 1600 MW EPRs for Hinkley

2 x 1600 MW EPRs for Sizewell



NuGeneration Ltd

(Toshiba Westinghouse/GDF Suez Joint Venture)

Technology Choice - AP1000

Plans for 3.6GW at Moorside in Cumbria

HORIZON

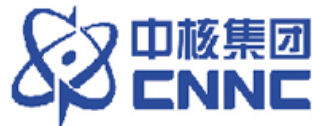
NUCLEAR POWER

Horizon Nuclear Power Ltd

Technology Choice – Hitachi ABWR

Plans for 3 GW at Wylfa on Anglesey & 3

GW at Oldbury in Gloucestershire



CGN / CNNC

Technology Choice – Hualong - 1000

Detailed plans not yet released.

Development at Bradwell, Essex

Decision Time

“By 2025, if current policy is unchanged, there will be a dramatic gap on our targets to reduce CO2 emissions;

...we will become heavily dependent on gas; and at the same time move from being 80/90% self-reliant in gas to 80/90% dependent on foreign imports,

These facts put the replacement of nuclear power stations, a big push on renewables and a step-change on energy efficiency, engaging both business and consumers, back on the agenda with a vengeance.”



Former Prime Minister,
Tony Blair 16 May 2006,
CBI Annual Dinner

Cross Party Consensus 2010-15



Why Electricity Market Reform?

- Investment in new plant must be economically attractive
- Low carbon plant capital intensive and long term
- Difficult economics in current market
- EMR needed to
 - Reward low carbon generation
 - Provide stable, predictable returns
 - Long term price stability for consumers
 - Lower prices in period up to 2030

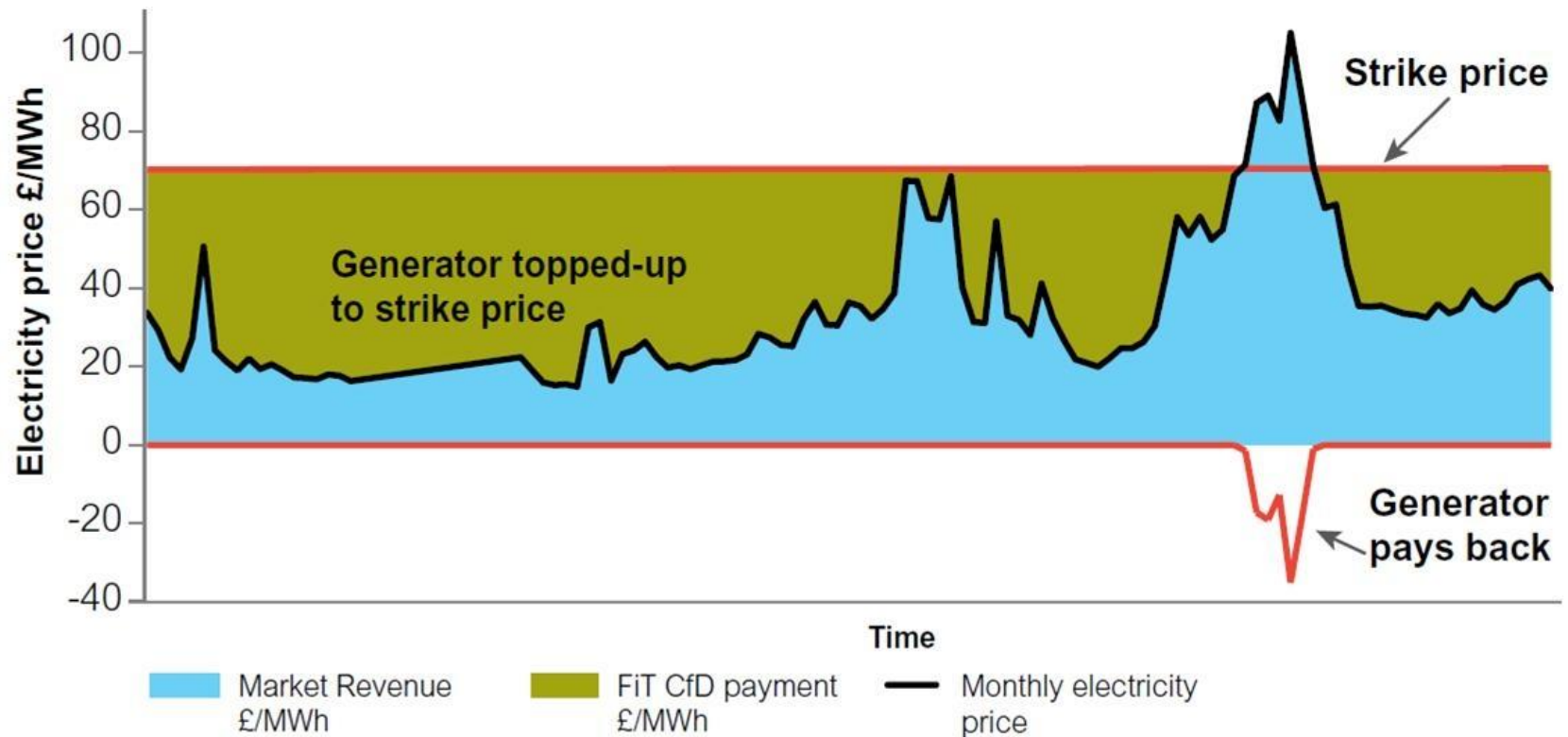


UK Electricity Market Reform

- **Feed-in Tariffs with Contracts for Difference (CfDs)**
 - Long-term contracts to provide revenue certainty to investors in low-carbon generation (Strike Price)
- **Capacity Agreements**
 - Payments for reliable capacity to be available when needed, helping to ensure security of supply
- **Carbon Floor Price**
 - To underpin the carbon price in the Emissions Trading Scheme
- **Emissions Performance Standard**
 - Regulatory measure which provides a back-stop to limit emissions from unabated power stations

Electricity Market Reform

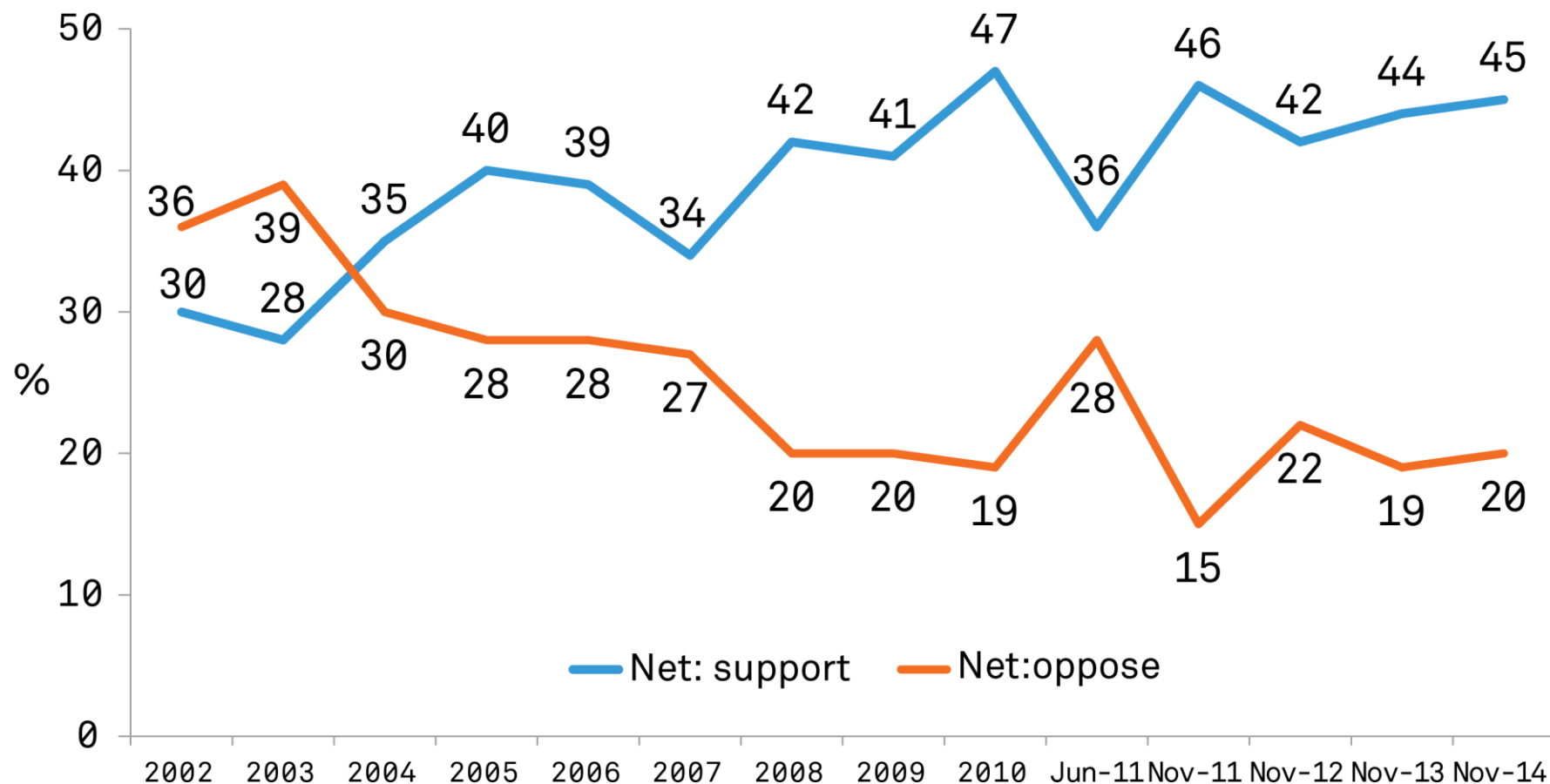
- Contracts for Difference



Cross Party Consensus

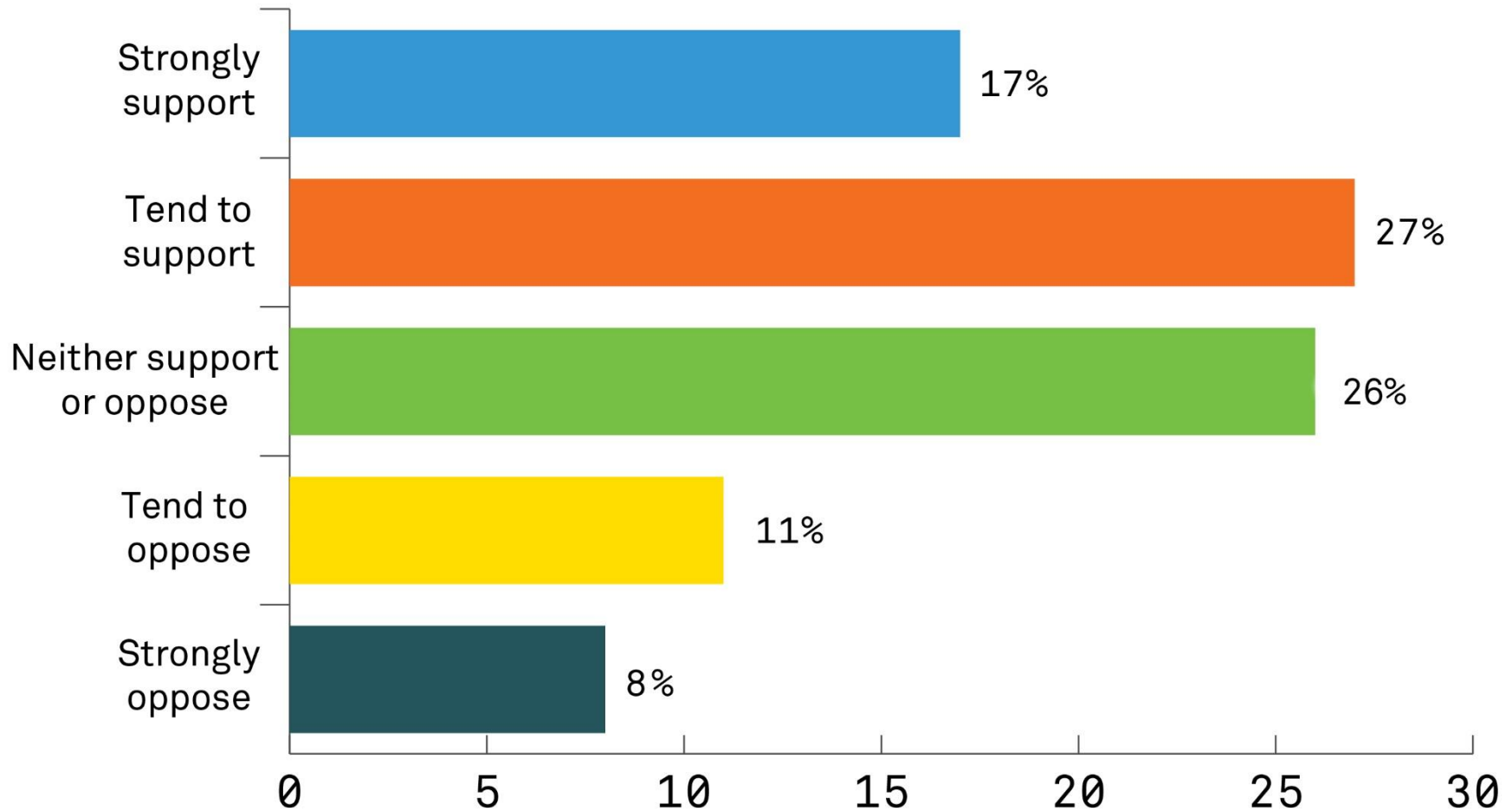


Support for replacement new build remains steady



Source: YouGov Poll November 2014

To what extent do you support or oppose the plans to build a new nuclear power station at Hinkley Point C?



Source: YouGov Poll November 2013

Nuclear New Build – The Benefits to UK

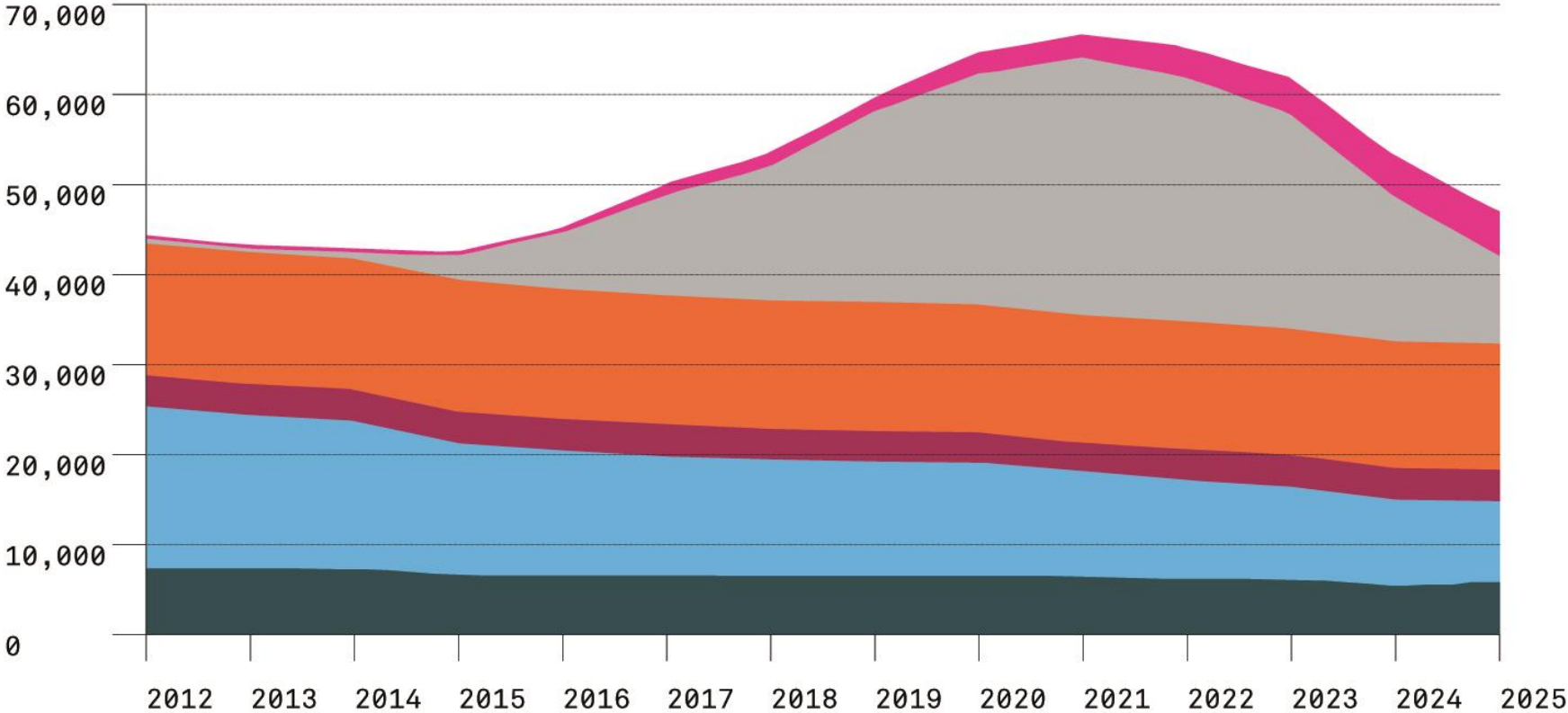
- Large scale CO₂ avoidance
- Stability of electricity prices

- 30 - 40,000 high quality jobs generated
- 500 graduates required each year to 2025
- Training & career opportunities:
 - Engineering
 - Manufacturing
 - Construction
 - Regulation
 - Operations
 - Maintenance

- Regional regeneration
- Boost for UK manufacturing

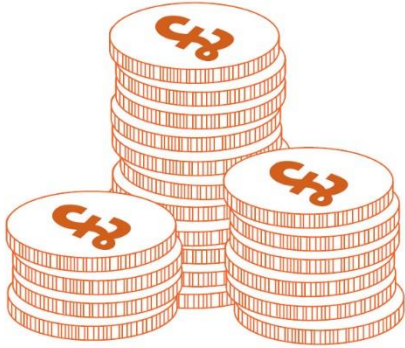


Nuclear Industry Employment with New Build



Current Operations
 Current NDA Sites
 Current NDA-Contractors
 Defence
 New Build Construction
 New Build Operations

Local economic, employment and infrastructure benefits of Hinkley Point C



£3 MN

TOWARD THE ENERGY SKILLS CENTRE AT BRIDGWATER COLLEGE

A PROGRAMME OF INVESTMENT IN COMMUNITY WELLBEING, EDUCATION, EMPLOYMENT AND SKILLS

£1.5MN

TO CREATE A NEW CONSTRUCTION SKILLS AND INNOVATION CENTRE AT BRIDGWATER COLLEGE



AROUND **900 JOBS**
AT THE NEW POWER STATIONS
FOR MORE THAN
60 YEARS

AROUND **25,000**
EMPLOYMENT OPPORTUNITIES
THROUGHOUT THE BUILD FOR
NEARLY A DECADE

£1.6MN TO WEST SOMERSET COLLEGE TO FACILITATE TRAINING TO MATCH THE NEEDS OF THE PROJECT





Nuclear Industry Association

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