

# Hinkley Point C

# An Opportunity to Power the Future

February 2013



“I want to see new nuclear come forward as part of our future energy mix and for the UK to be a leading global destination for investment in new build.”

**Rt Hon Ed Davey MP,**  
**Secretary of State for Energy and Climate Change,**  
*Construction News*, 19 June 2012





# Our energy future

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# About EDF

**EDF is the world's leading nuclear power utility and one of Europe's largest energy companies with 38 million customers across Europe and 156,000 employees worldwide. Globally, the company generated 628 tera watt hours of electricity in 2011 alone. The Group's activities include generation, supply and other energy services.**

EDF Energy is a wholly owned subsidiary of EDF Group, employing around 15,000 people across the UK. We benefit from the financial strength of a large European group, as well as combined procurement capabilities, pan-European dealings for major customers, international expertise and access to significant R&D resources. Ultimately, these all add to our reputation for stability and reliability.

EDF operates 58 nuclear reactors in France, with another under construction at Flamanville – the first EPR™ power station in France. In addition, EDF is part of a joint venture with China Guangdong Nuclear Power Corporation that is building two EPR™ reactors at Taishan in China.

EDF Energy is the UK's largest producer of low-carbon electricity, and produces around one-fifth of the country's electricity from its nuclear power stations, wind farms, coal and gas power stations and combined heat and power plants. The company supplies gas and electricity to more than 5.5 million business and residential customer accounts and is the biggest supplier of electricity by volume in Great Britain.

**EDF Energy operates 15 nuclear reactors at sites across the UK and has published plans to build four more, two at Hinkley Point in Somerset and two at Sizewell in Suffolk, subject to the right investment framework.**



# Hinkley Point C Explained

**Hinkley Point C could mark a significant moment in the revitalisation of the UK's nuclear power industry.**

Should a positive investment decision be made, EDF Energy's Hinkley Point C will be the first in a new generation of nuclear power stations in the UK. Capable of generating 3,260MW, it will sit alongside an operating nuclear power station, and one being decommissioned, on the northern Somerset coast in the south-west of England.

## **The main power station development will include:**

- Two UK EPR™ nuclear reactor units
- Two turbine halls
- Cooling water infrastructure
- Fuel and waste management facilities including storage
- Electricity transmission infrastructure
- Service and ancillary buildings
- A sea wall
- A public information centre
- Landscaping for the construction land

The Hinkley Point C project also includes some associated developments in the surrounding area. The main associated developments are an accommodation campus next to the main site and two accommodation campuses in Bridgwater for construction workers; four park and ride facilities to transport workers by bus to the Hinkley Point C development site; a temporary jetty and refurbished wharf to deliver as much heavy equipment and material as possible by sea to reduce pressure on roads; a bypass to the west of the nearby village of Cannington and a series of highway improvement schemes across the local road network.

# Our energy future

**The United Kingdom is facing a critical time in its energy future. With the Government forecasting a power-generation gap on the horizon, ensuring sufficient supply of secure, low-carbon, affordable electricity to power Britain's homes and businesses is a major challenge.**

By 2025 over 40% of the UK's older power stations are expected to close. These planned closures come at a time when demand for electricity is expected to rise and Britain's own resources of known oil and gas in the North Sea are declining. Major investments are therefore required to deliver a diverse energy mix.

EDF Energy believes that replacing this lost generating capacity with reliable new low-carbon sources is vital if Britain is to secure its energy future and meet its climate change commitment to reduce emissions by at least 80% by 2050.

According to the Committee on Climate Change, nuclear has the potential to deliver around 40% of the UK generation mix by 2030. The new nuclear power station we propose to build at Hinkley Point in Somerset is designed to be a part of this solution.

Hinkley Point C, based on tried and tested Pressurised Water Reactor technology, will be the first nuclear power station to be built in the UK for more than 20 years. It will have the capacity to generate safe, reliable, low-carbon electricity, enough to power 5 million homes for its anticipated lifespan of 60 years, which is equivalent to 1,500 billion units (kWh)\*.

\*Hinkley Point C would have a capacity of 3260 MW, with at least a 90% load factor. Over 25 TWh per annum would therefore be produced. 1 TWh = 1 billion kWh. 25 TWh/annum x 60 years = 1500 billion kWh.

Hinkley Point C will bring many other benefits too. It is a huge investment project – comparable in scale to the London 2012 Olympic and Paralympic Games – and it will create large-scale employment in UK manufacturing and construction. It can position the UK as a global leader in new nuclear energy, a prospect that is already inspiring a new generation of UK scientists and engineers. It will have a transformational effect on the economy of Somerset.

The time is right. The Coalition Government and Labour Party have recognised the need for nuclear as part of the future low-carbon energy mix. In polling conducted by ComRes for EDF Energy in 2012, 83% of MPs polled supported the construction of a new generation of nuclear power stations. Support for new nuclear from the public is also strong. Nuclear can be part of a long-term solution to meeting the UK's low-carbon energy needs.

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**“Nuclear is a long-term guarantee that the UK can have the low-carbon energy it needs. Join us in backing Hinkley Point C and help to secure Britain's energy future.”**

**Vincent de Rivaz CBE,**  
Chief Executive Officer, EDF Energy

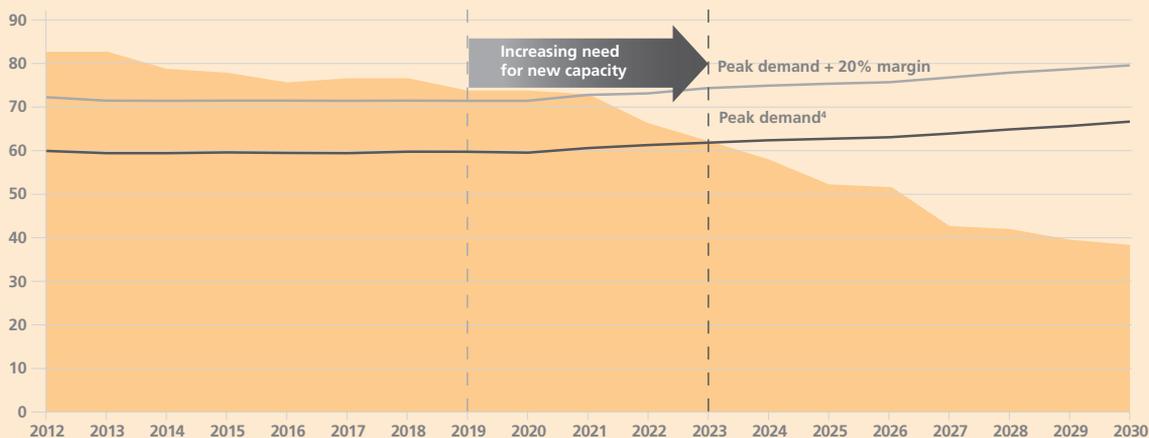
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With 40% of GB generating assets expected to close by 2025, large amounts of new capacity are required...



The EDF Energy London Eye

### Existing and under construction generation plant in Great Britain



- Notes:**
1. The date when new build large scale baseload generation is required depends on the rate of closure of existing plant.
  2. This chart shows a forecast of total installed capacity of power plants in Great Britain as of 05/07/12, based on EDF Energy analysis. Chart excludes interconnection, currently 3.8 GW, due to uncertain availability during peak times. Assumes 7-yr average lifetime extension for nuclear.
  3. Wind installed capacities have been de-rated at 10% to reflect wind's limited ability to provide capacity at peak times.
  4. Peak demand based on Redpoint Energy analysis for DECC as part of the UK Government's Electricity Market Reform Technical Update, Dec 2011.
  5. A 20% capacity margin is added to cope with extremes of weather and plant unavailability.

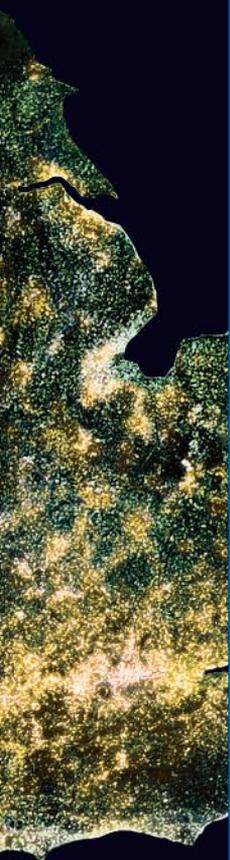
"We don't want to delay, without reason, the important progress we need to make on new nuclear power in our country."

Rt Hon Ed Miliband MP, Leader of the Opposition,  
Hansard, 28 March 2011



“This is a key moment on the path towards nuclear new build and I welcome it wholeheartedly. I am confident [it] will go from strength to strength in 2013.”

**John Hayes MP, Energy Minister,**  
Comment on the Generic Design Assessment,  
13 December 2012



# First in class

Keeping the lights on – Britain by night

# First in class

**EDF Energy is playing a leading role in helping Britain meet its energy challenge. Hinkley Point C in Somerset would be the first new nuclear station built by a publicly listed company in the UK. It is the first nuclear project in which EDF has been the lead client outside of France.**

The jigsaw pieces of the nuclear new build project have been pulled together with many **firsts** achieved along the way, to the point where we are now 'shovel-ready'.

## Policy framework

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### The UK policy context

The Government and Opposition have backed new nuclear power stations to help Britain meet its long-term CO<sub>2</sub>-reduction targets affordably and provide a secure supply of electricity.

NIA polling show that the majority of the public agrees that Britain needs a mix of energy sources to ensure a reliable supply of electricity, including nuclear power and renewable energy sources.

In July 2011, the Government designated the **first** National Policy Statements for Energy Infrastructure, setting out the policy framework for a faster, more predictable and accountable planning system. The House of Commons voted overwhelmingly in favour of the National Policy Statement on Nuclear Power Generation.

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**In July 2011, 267 MPs voted for and only 14 against the National Policy Statement.**

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### The European policy context

The EPR™ design is one of the **first** two reactor designs to pass the "justification" test prior to construction. This is a requirement of European law on basic safety standards. The decision justifying use of the technology was passed overwhelmingly in a UK parliamentary vote in October 2010.

In July 2012 the European Commission confirmed that the project meets the requirements of the Euratom Treaty for a new nuclear power station. The Commission was satisfied that plans for disposal of radioactive waste will not have any impact on other Member States, as required by Article 37 of the Treaty. With reference to information provided under Article 41, the opinion of the Commission was that the proposed investment fulfils the objectives of the Euratom Treaty and contributes to developing a sustainable national energy mix.

## Licensing

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In November 2012 the Office for Nuclear Regulation awarded NNB Generation Company, the new nuclear build subsidiary of EDF Energy, a Nuclear Site Licence for Hinkley Point C – the **first** to be awarded for a new power station site in the UK for 25 years.

By granting the site licence, the UK's independent nuclear regulator has recognised that the new build organisation has developed the required management structure, plans and procedures needed for the construction, commissioning and operation of the proposed new nuclear power station in Somerset.



David Cameron with Humphrey Cadoux-Hudson on visit to EDF Paris – presenting the EPR™ reactor.

“The Nuclear Site Licence serves as a vote of confidence in EDF Energy’s ability to deliver new nuclear. It serves as further evidence of the strong momentum behind our new nuclear plans.”

**Humphrey Cadoux-Hudson,**  
EDF Energy, Managing Director of Nuclear New Build

The conditions of the licence require the development, implementation and maintenance of adequate safety arrangements throughout the life of Hinkley Point C.

## Power station design

The UK EPR™ power station design application submitted jointly by EDF Energy and AREVA was the **first** to successfully complete a thorough examination process in the UK, known as a Generic Design Assessment, by the safety and environmental authorities. The EPR™ power station design was accepted for use in the UK in December 2012.

The completion of the Generic Design Assessment process was marked by the award of a Design Acceptance Confirmation by the Office for Nuclear Regulation, and a Statement of Design Acceptability by the Environment Agency. This certification recognises that the UK EPR™ power station design meets the UK’s stringent safety requirements as assessed by the joint regulators and demonstrates the robustness of the design.

It was a major milestone for Hinkley Point C and means that we have a stable design before beginning construction, which in turn gives us a secure basis for predicting our project delivery costs.

## Planning applications

Consent to build the power station requires a Development Consent Order (DCO) from the UK Planning Inspectorate and approval by the



Reactor and Nuclear Steam Supply System

Secretary of State. Hinkley Point C has been leading the way as the **first** Nationally Significant Infrastructure Project on this scale to undergo the year-long in-depth examination by the Planning Inspectorate that this process involves. The 55,000 pages of detailed evidence produced as part of the application was unprecedented.

The Generic Design Assessment’s **850,000** hours of engineering studies over four years will give the project at Hinkley Point a stable design which underpins accurate cost projections.

### First of a kind public consultation

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Our Hinkley Point C proposals were directly shaped by three years of in-depth community consultation and stakeholder engagement. This is the **first** time that a major nuclear project has undertaken its consultation under the Planning Act 2008 regime, and has led to strong and lasting relationships with the Somerset local authorities and local communities.

### Hinkley Point C forgings

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Investment has been made in procuring the long lead forgings to manufacture the reactor pressure vessel and steam generators. The **first** forgings are reaching the end of their manufacture – once they are all complete the vessel manufacture in France can begin.

### Decommissioning & waste disposal funding

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Hinkley Point C will be the **first** nuclear project to have a Funded Decommissioning Programme (FDP). The Energy Act 2008 requires the operator of a new nuclear power station to provide secure financing arrangements to meet the full costs of decommissioning and their full share of the costs of waste disposal before nuclear-related construction can begin. We are proud to be setting this precedent, which ensures we are taking full responsibility for our power station from start to finish.

### Site preparation

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Following intensive work with the Somerset local authorities, EDF Energy was granted permission to prepare its site for construction in July 2011, making it the **first** major infrastructure project under the current planning regime to have such early investment. Granted by West Somerset Council, the site works include fencing and site excavation as well as £30 million worth of measures towards mitigating the impact of the project.

### Early investment in skills

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The Hinkley Point C project is one of the **first** major projects to invest so much at an early stage in skills and education infrastructure. We have pledged to enable Somerset people to benefit from the skills and employment opportunities the project will bring. As such EDF Energy is planning to invest over £20 million in training, education and skills in Somerset that includes a commitment to over £6 million for West Somerset Community College and Bridgwater College. We have already built an enterprise centre and construction skills centre as part of the early investment of the project.

**What we have achieved so far is unique. Taken together these achievements mean we are 'shovel ready' at Hinkley Point C.**



Hinkley Point C Nuclear Site Licence Team

## Our project by numbers

By the time the project is completed we expect that:

- **25,000** new employment opportunities will be created over the construction period – **800** highly skilled jobs in EDF and its partners have already been established on the design and preparatory work for the new power station
- Two UK EPR™s will generate low-carbon electricity for around **5 million** homes
- **10 million** tonnes of CO<sub>2</sub> emissions a year will be avoided
- **50 million** hours of work will have been carried out on site
- Around **5,600** people will be employed on site at peak
- **900** permanent jobs will be created throughout **60** years of operation
- **£100 million** per year will be put into the regional economy during peak construction
- **£40 million** per year will go into the regional economy reaching over **£2bn** over the lifetime of the project
- **400** new apprenticeships will be created
- Over **12,000** trees will have been planted at Hinkley Point C
- Hinkley Point C construction site will cover **175** hectares
- The main earthworks will excavate **4 million cubic metres** of earth – the equivalent of the volume of water in 1,300 Olympic swimming pools
- At least **3 million tonnes** of concrete will be used - 75 times more concrete than was used to build the Millennium Stadium in Cardiff
- **230,000** tonnes of steel reinforcement will be needed - enough for 1900 km of railway tracks that could stretch from London to Rome.



Pre-heating of steam generator shell



End of machining for steam generator shell



“As two great civil nuclear nations, we will combine our expertise to strengthen industrial partnership, improve nuclear safety and create jobs at home.”

**Rt Hon David Cameron MP, Prime Minister,**  
UK-France Declaration on Energy, 17 February 2012



# Creating excellence through people and technology

Hinkley Point C team members on site

## The Team

# Creating excellence through people and technology

**To ensure we are in the strongest possible position before construction begins, we have brought together some of the best and most experienced people from the nuclear industry and from other large and complex infrastructure projects including the Olympic Park and Heathrow Terminal 5. By combining our strengths we are building a world-class team to deliver this critical project.**

We have recruited experienced professionals from other successful major infrastructure projects. These include people who helped deliver the London 2012 Olympics, widely recognised as one of most successful large and complex infrastructure projects of recent years.

The latest generation of reactors build on the best aspects of the successful designs now operating, and add enhanced safety systems, reliability and greater fuel efficiency, all of which also enable increased output. Nuclear technology demands uniquely high standards throughout the engineering, design, manufacturing and construction process – and a relentless attention to creating a robust safety culture.

A world-class nuclear engineering team has therefore been brought together, experienced in the construction, safety assessment, operation and maintenance of Pressurised Water Reactors. This is backed by EDF's comprehensive research and design capability.

As a result, we are confident that we have the right team, with the right experience and the right capabilities, to deliver Hinkley Point C successfully.



Planning team with one copy of DCO application

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**“Our people are energised. Motivated. They are ready to underpin with a human adventure, what is a formidable industrial adventure.”**

**Vincent de Rivaz CBE, CEO, EDF Energy**  
European Nuclear Conference

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## Nuclear New Build Profiles

There is significant depth of experience in the Hinkley Point C team – below are some of the key members:



### **Humphrey Cadoux-Hudson**

**Managing Director**

With a degree in engineering, Humphrey trained at KPMG as an accountant, moving from there to Seeboard where he became a Director in 2000. Prior to his appointment as managing director of the Nuclear New Build business, Humphrey was EDF Energy's Chief Financial Officer.



### **Chris Bakken**

**Project Director, Hinkley Point C**

Chris has extensive experience working in the nuclear energy sector across the USA and Europe. He has previously worked at under-performing US power plants as a trouble-shooter, focusing on building relationships with the regulator and trade unions. He served as Chief Nuclear Officer at American Electric Power, Public Service Enterprise Group and British Energy, before joining the new build team.



### **Richard Mayson**

**Director of Planning and External Affairs**

Richard worked for nearly 30 years at British Nuclear Fuels Limited (BNFL) including as project manager of reactor studies where he looked at the potential for building new power stations at Sellafield and Chapelcross. He later moved to head up the safety department of Devonport's Trident submarine project before returning to BNFL where he led the nuclear new build initiative.



### **Robert Pays**

**Engineering Director**

Robert has a wealth of experience in the construction and commissioning of new nuclear power stations, gained during a 33 year career with EDF. Most recently he has been responsible for the engineering management of the new build EPR™ projects at Flamanville and Taishan.



### **Nigel Cann**

**Site Construction Director, Hinkley Point C**

Nigel has worked in the nuclear industry for 33 years, being plant manager at Dungeness B and Sizewell B, and becoming station director at Hinkley Point B power station in 2007. He has been in his role of Site Construction Director since April 2011.



### **Henri Herkelmann**

**Client Construction Director**

Henri joined EDF over 30 years ago after studying engineering at the Ecole Supérieure d'Electricité. He has extensive experience of nuclear new build, being part of the generation of engineers in France who built five EDF nuclear plants simultaneously in the 1970s. His career has taken him to stations across the globe, from China to South Africa, as well as various plants across France.



### **Ken Owen**

**Commercial Director, Hinkley Point C**

A graduate in nuclear engineering, Ken spent over 9 years with British Energy before working in the automotive industry, in manufacturing, and on large infrastructure projects including the London 2012 Olympics. As the Commercial Director overseeing the Olympic infrastructure construction, he managed the procurement, management and integration of over 140 contracts.

### Britain and France working together

Britain and France already operate over 50% of the EU's nuclear capacity. Together, the two major civil nuclear nations are now combining their experience to form our unique Nuclear New Build Team.

Britain has more than half a century of experience of safe and successful nuclear power station operation. Add to this the French experience through EDF's position as a world leader in nuclear energy and we believe we are combining the right experience and capability to deliver nuclear new build safely on time and on budget.

EDF Energy's nuclear fleet, including the Pressurised Water Reactor at Sizewell B, now provides about 19% of the UK's electricity needs. There have been generations of nuclear reactors built in the UK, however all but one of the ten first-generation nuclear power stations in the UK are now closed. The seven second-generation power stations using Advanced Gas-Cooled reactors provide the backbone of the UK's current nuclear generation fleet.

EDF has operated nuclear power stations in France since 1963, and today operates 58 nuclear reactors across the country. The company has a long history of exporting its nuclear expertise world-wide, beginning in the 1980s with the building of the Daya Bay power plant in China. With a number of EPR™ projects currently under construction, Hinkley Point C is already taking advantage of this extensive experience.



Flammanville 3 under construction



EPR™ reactor vessel forging in Le Creusot, France

© AREVA

## Evolutionary and innovative technology

Our UK EPR™ design draws on the experience of several thousand reactor-years of light water reactor operations worldwide. The design includes innovations to enhance safety, cost-efficiency and sustainability.

### Safety innovations include:

- Greater robustness against external hazards such as aircraft crashes and earthquakes;
- Higher protection against core meltdown and its radiological consequences;
- Four-fold redundancy in safety systems; and
- Reduction in effluent release and radioactive waste compared with earlier reactor types.

### Innovations to enhance the cost-efficiency of EPR™ reactors include:

- 60-year service life design;
- High overall efficiency, through the use of an efficient steam generator;
- Continuous improvement of construction methodology and task sequencing to reduce construction time;
- Enhanced and more flexible fuel utilisation: the fuel assemblies are designed to achieve high performance, and the core design allows a fuel cycle length of up to 24 months; and
- An availability factor of more than 90 percent averaged over the entire service life of the plant.

The new EPR™ reactor design marks significant progress towards sustainability. The reactor has been designed to optimise the use of nuclear fuel and to minimise the production of long-lived high-level radioactive wastes. Thanks to its large core, surrounded by a neutron reflector, a maximum number of neutrons contribute to energy generation in the core. This means that the EPR™ reactor uses less uranium and produces less long-lived radioactive wastes compared with water reactors in operation today.

All these enhancements are the result of intensive work during the design and planning phase. More than 850,000 hours of engineering studies have given the project a stable design with known costs and improved reactor safety as part of the Generic Design Assessment process.



“We are determined to make the UK a leading global destination for investment in new nuclear, which will play a key role in our future energy mix. We welcome EDF Energy’s continued commitment and determination to take forward the Hinkley Point C project.”

**Department of Energy and Climate Change press statement**  
4 February 2013

# Underpinning success

# Underpinning Success

**Building a nuclear power station is an ambitious project which brings its share of challenges. Our responsibility is to face and address those challenges and to find suitable and sustainable solutions before the start of construction.**

## Safety

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Nuclear safety is our overriding priority. At EDF Energy we instill a culture that every single person working for the company has direct or indirect impact on nuclear safety. We place nuclear safety at the forefront of what we do, and our ambition is to achieve a 'zero harm' safety record.

The UK has been generating electricity from civil nuclear power stations for more than half a century, and the excellent record over that period demonstrates the industry's long-standing commitment to safety. But we are not complacent. Incidents such as the 2011 earthquake and tsunami in Japan and the subsequent incident at Fukushima Dai-ichi nuclear power plant show that there will always be new challenges to rise to.

Following the tsunami, HM Chief Nuclear Inspector, Dr. Mike Weightman, carried out a rigorous and independent investigation and identified the lessons to be learned. Encouragingly, his overall conclusion was that UK nuclear facilities had no fundamental safety weaknesses though he made a number of recommendations for improvement.

In parallel, all operators of nuclear power plants in the European Union were asked to review the response of their plants to extreme situations and report the findings – the so-called 'stress tests'. EDF Energy's new nuclear build subsidiary, as a prospective licensee, was asked by the Office for Nuclear Regulation to subject the UK EPR™ proposals to the same process. We are glad to say that all the analysis since Fukushima, together with the extensive work we have undertaken to complete the Generic Design Assessment, has confirmed the safety of the EPR™ design. It is safe against flooding and earthquakes, as well as against the additional extreme events considered as part of the stress tests.



Security signs on Hinkley Point C site

## Affordability

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It is essential that Hinkley Point C can produce electricity at a price our customers can afford as well as being competitive with other forms of low-carbon generation.

All the work undertaken prior to the start of construction of Hinkley Point C means the project has a stable design with known costs.

The cost estimates we have provided to the UK Government for the construction of Hinkley Point C already include the lessons and experience from Flamanville. They also allow for the specific conditions at Hinkley Point and in the UK, including engineering, site and labour costs. These costs will be used in setting the price for electricity under long-term contracts agreed with the Government, and thus determines the income that Hinkley Point C will receive when producing electricity.

This price must be durable, delivering a fair deal for electricity consumers and EDF Energy over the long term. In addition, investors in the project will expect a fair return, reflecting their costs and the risks they take. Although construction requires a large upfront capital investment, this will be recovered over a long period during which the plant will produce huge quantities of electricity. While the price will be higher than the current wholesale market price for electricity, it will provide protection against volatility in the uncertain market for fossil fuels. The impact for consumer electricity bills will be lower than for other large-scale low-carbon options, and it will be secure and predictable.

We expect that there will be further EPR™ projects following Hinkley Point C, creating a fleet of new nuclear power stations. Subsequent projects will benefit further from the experience we have built up, which should result in efficiency savings and lower costs overall. A fleet provides more certainty to the supply chain, advantages in terms of investment in the UK industrial base, and benefits to electricity users through reduced costs.

The completion of the Generic Design Assessment in December 2012 was a major step toward a finalised design of the UK EPR™ at Hinkley Point. This followed thorough engineering studies and an intense process overseen by the joint UK regulators, all of which helps eliminate risk ahead of construction.

The procurement has been broken down into around 140 contract packages, enabling many different suppliers to compete for work.

Key contractors are already closely involved in the project, including those working on the preparation of the site in Somerset, and we have a detailed engineering plan in place. This means when all elements are ready and the construction starts, the work can continue without interruption through to the finish.

This hard work and preparation has ensured that EDF Energy is 'shovel-ready' and poised to deliver immense benefits in terms of jobs, skills and economic growth – locally and nationally.

### Waste and decommissioning

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The UK needs to find a long-term solution for the radioactive waste accumulated over the last decades – not just from the civil nuclear industry but from other industries as well. The UK Government's solution is the construction of a geological storage facility. The Government's Managing Radioactive Waste Safely programme is currently working to identify a suitable site for a geological disposal facility to house the UK's spent fuel and intermediate level waste safely and securely.

As a developer of new nuclear power stations we will play our part by putting in place robust plans to manage the waste and spent fuel that we produce; to decommission our plants responsibly; and to set aside adequate funds for these plans. This is what the Funded Decommissioning Programme is for and we are fully committed to fulfilling the obligations we have and to taking full responsibility for our power station from beginning to end.



After the on-site storage period the spent fuel from Hinkley Point C would be over-packed into durable, corrosion-resistant disposal canisters (illustrated above) which would be disposed of at the geological disposal facility.



Hinkley Point C construction director Nigel Cann with site contractor

## Work on site

EDF Energy has been keen to ensure the highest level of productivity during construction on site. We have pledged to create a progressive culture and project ethos that engenders respect for all people engaged in the work and promotes the highest standards of safety, quality and productivity. Our ambition is ultimately to create a step-change in the capability of the UK engineering and construction sectors.

2012 saw the start of formal engagement between EDF Energy and the trade unions on Hinkley Point C construction. There has been tremendous enthusiasm by the unions for our project and the opportunities it affords for employment, skills development and the revitalisation of our supply chain. They have invested considerable time, energy and commitment and continue to be great champions of the nuclear industry and nuclear new build.

## Public support

We have been encouraged to see that public acceptance of new nuclear stations being built alongside existing ones is now at its highest level for five years. In July 2012 we commissioned a YouGov survey that found that nearly two thirds of Britons (63%) back the use of nuclear energy as part of the UK's energy mix.

Although significant challenges remain, encouraging progress has been made in developing the industrial relations and employment framework for the project. Our joint aspirations for the project are encapsulated in the Social Covenant which we agreed with the unions during 2012. It sets out the principles governing the close social relationship between EDF Energy, the contractors and the trade unions involved in the Hinkley Point C project:

- to deliver the safest, most competitive, productive and sustainable project in the UK;
- to provide among the most desirable places to work; and
- to deliver major socio-economic benefits to the local and wider UK communities.

It is crucial to have public support for new nuclear. Our ethos is to be open and transparent about our activities and to continue to make the case for new nuclear as part of the country's diverse energy mix.



“The Hinkley project has significantly contributed to the education and prospects of young people in Somerset.”

**Mike Robbins,**  
Principal of Bridgwater College

# Realising Local Benefits

Somerset children visiting Hinkley

# Realising Local Benefits

**The Hinkley Point C project aims to have a positive and lasting impact on Somerset and the whole of the South West. To that end listening to local people and ensuring we provide local benefits is at the heart of our project.**

## Listening

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Our consultations with local communities have gone far beyond what is typically required of developers, and we have welcomed the opportunity to engage in a genuine two-way dialogue that has had a real effect in shaping our proposals for Hinkley Point C.

We formally consulted for more than 30 weeks, carrying out two main stages of consultation with a further two supplementary stages. Over a three-year period between 2008 and 2011 we directly engaged with 6,480 consultees, held 34 public exhibitions and attended 67 public meetings. We received more than 2,000 responses to our consultation, producing 33,000 categorised comments to which we responded. In addition, we continue to have a close relationship with neighbours near the proposed Hinkley Point C site, as well as ongoing liaison with key organisations such as government agencies, local councils, chambers of commerce and trade unions.

Significant changes have been made to the plans for Hinkley Point C as a direct result of consultation feedback, and every response was given serious consideration.

The consultation also helped identify issues with neighbours near the proposed Hinkley Point C and associated development sites and wherever possible we have worked to mitigate these impacts.



Hinkley Point C public exhibition

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**“It’s really positive to be working so closely with EDF Energy to secure opportunities and benefits for local firms.”**

**Rupert Cox,**  
Chief Executive of Somerset Chamber of Commerce

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Discovering nuclear energy with Vincent de Rivaz at Hunterston - our work in Somerset schools is part of broader EDF Energy education initiatives in the UK

## Benefits

Creating a lasting economic benefit to the area around the power station is a priority for us. We want to ensure that as many local people as possible can take advantage of this opportunity. The construction and operation of Hinkley Point C will provide a significant boost for local employment, with at least 5,000 people from Somerset expected to work directly on the project.

We are investing in local people, equipping them with the necessary skills to work on the project, ranging from construction and energy skills to training in business and enterprise. We have funded the development of a new construction skills training centre, working closely with Bridgwater College. We are also spending £15 million redeveloping historic Cannington Court to become the EDF Energy Campus Management and Skills Training Centre.

There are also significant opportunities for young people throughout the project. Of the £1.6 million we have already invested in West Somerset Community College, £1 million will be dedicated to developing a new apprenticeship hub. There will be an estimated 400 apprenticeships created during the project, some of whom will have gone through our Access to Apprenticeships scheme – a training scheme to help those with potential but who need help getting the right skills and qualifications to reach the apprentice entry level.



Presenting a cheque to West Somerset Community College

An employment brokerage scheme has also been set up in association with Job Centre Plus to help match people to the numerous job opportunities generated by the project.

In addition to creating jobs, the project is providing substantial opportunities for local companies. More than a thousand Somerset businesses have already registered their interest on our supplier database. As early as 2012 £25 million worth of contracts had already been awarded by EDF Energy to local firms.

# New Nuclear Opportunities

UK national supplier day event



“I want to see wave upon wave of investment coming into Britain to build our nuclear power stations.”

**Rt Hon David Cameron MP, Prime Minister,**  
Parliamentary Liaison Committee, 11 December 2012

Bringing long-term rewards for Britain and France

Save today. Save tomorrow.



# Bringing long-term rewards for Britain and France

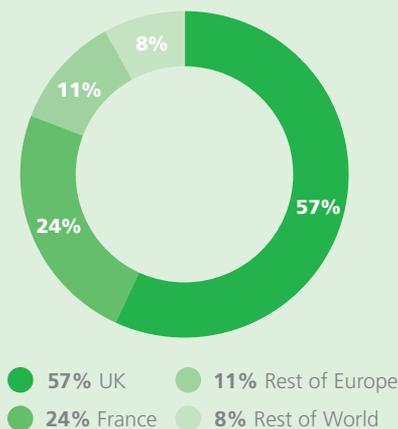
EDF Energy's UK national supplier day event

## Bringing long-term rewards for Britain and France

**Fundamentally, Hinkley Point C is an energy project, designed to help the UK meet its long term electricity supply needs. But it is more than a nuclear power station – it will produce many other economic and social benefits too, for both the UK and France, including:**

- Reaching across the Channel – the skills and experience of British companies such as Kier Bam and Laing O’Rourke, and French companies such as AREVA and Bouygues TP, are coming together to the benefit of the project. The UK supply chain brings knowledge of the national regulatory and construction environments, along with recent proven experience of delivering large infrastructure projects such as the Olympic Park. French companies have extensive experience and expertise in EPR™ technology and nuclear construction projects from all over the world. Many other companies, including small and medium enterprises in both countries, are also gearing up to participate in the project. Working together, companies based in the UK and France could potentially win more than 80% of the value of the construction project.
- Creating high value manufacturing employment – AREVA, our French partner which is supplying the reactors, has identified 50 UK companies such as Rolls Royce that could supply parts and services including forgings, pumps, valves, cranes, electronics, piping, tanks and refrigeration units.
- Reinvigorating the engineering, construction and manufacturing industries in both France and the UK, and providing an international showcase for their skills – France already has a strong track record for manufacturing and equipment supply to the nuclear industry, with many companies already supplying components for the EPR™. Hinkley Point C can be a launch platform for both countries to win a share of a potentially huge international market.

**Geographical distribution of opportunities in construction**



This reflects where the economic opportunities exist. The proportions are based on existing contractual commitments, strategic partnerships and our estimates of supply chain capability.

“Britain and France, together, have the chance to demonstrate their industrial stamina.”

Vincent de Rivaz CBE, CEO, EDF Energy  
European Nuclear Conference, 2012



Installation of the Dome – Taishan, China

© EDF – Philippe Convert

- Stimulating the supply chain – we have held a number of supply chain conferences, nationally and locally, to promote the opportunities available to business. By the end of 2012, 550 companies had registered interest in supplying the project on our national registration system and 1,000 had registered via the Somerset Chamber of Commerce.
- Strengthening the UK economy through billions of pounds of investment – when the operational phase is included, around two-thirds of the value of the project will benefit the UK.
- Building a springboard for further nuclear projects in the UK, bringing significant new employment – the Nuclear Industry Association estimates that a new build programme of 16 GW of capacity in the UK over the next 15 to 20 years could increase the number working in the nuclear industry from 44,000 to 66,500 at the peak of construction activity.
- Boosting GDP by £5.1 billion annually, and increasing exports by between £400 million and £900 million – a 2012 study by the Institute for Public Policy Research estimated that such an economic impact could result from a nationwide new nuclear build programme.
- Inspiring the next generation of young British engineers and scientists – EDF Energy already has a well-established apprentice scheme and Hinkley Point C will create many more opportunities, both within EDF Energy and the supply chain.
- Producing innovative ways to improve the UK's skills base – the new Nuclear Advanced Manufacturing Research Centre in Sheffield led by Sheffield and Manchester Universities and with Rolls-Royce as lead industrial partner, combines industry expertise with university innovation. The Centre is already working with companies to improve capabilities and performance along the nuclear supply chain.

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“AREVA is delighted to take part in the re-birth of the UK nuclear new build industry. We are committed to making as much use as possible of the UK's excellent engineering skills in the construction of the EPR™ reactor and to develop these skills further.”

**Philippe Knoche, AREVA,**  
Chief Operating Officer

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# Conclusion

**Powering the UK's future begins today. Subject to the right investment framework, EDF Energy is committed to delivering the first new nuclear build in the UK for 25 years. Not only will Hinkley Point C help to meet the UK's future energy needs, it will bring many billions of pounds worth of investment, and provide a significant boost to the wider UK economy during both construction and the life of the power station.**

We want to ensure that the UK can make the most of this exciting opportunity to deliver nationally significant infrastructure which is desperately needed.

To that end, we are ready to build more than just a power station. Our achievements to date demonstrate our drive, our commitment and our capability.

Hinkley Point C has brought together a world-class team drawn from other successful construction projects in the UK, France and further afield. They are combined with the world-leading expertise of EDF, with one goal: to lead the UK's new nuclear renaissance and unlock the potential that future nuclear can bring.

This project will make a real difference to people's lives through jobs, investment in skills and its contribution to the UK's energy supply. It will inspire a generation.

The UK Government is also playing its part by delivering reform of the electricity market to create the framework suitable for long-term investments in low-carbon generation. The Energy Bill will enact these reforms and enable investment to come forward. This Bill and the contract for difference it allows will unlock the benefits described in this publication.

At EDF Energy we are 'shovel ready' and are poised to deliver the secure and low-carbon energy supply the UK needs for generations to come.

**Vincent de Rivaz, CBE**  
Chief Executive Officer, EDF Energy

**Humphrey Cadoux-Hudson**  
Managing Director, Nuclear New Build,  
EDF Energy

# EDF Energy Nuclear New Build (NNB) Leadership Team

## **Humphrey Cadoux-Hudson**

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## **Nigel Cann**

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## **Henri Herkelmann**

Client Construction Director

## **Barbara Jones**

Human Resources Director

## **Nigel Land**

Finance Director

## **Richard Mayson**

Director of Planning and External Affairs

## **George Borlodan**

Pre-Operations Director

## **Chris Hamill**

Head of Legal and Company Secretary

## **Gareth Wynn**

Communications Director

## **Paul Newman**

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## **Bernard Ainsworth**

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## **Paul Thomas**

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## **Paul Spence**

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## **Fiona McMillan**

Non-executive Director

## Sources used in compiling this publication include:

- European Commission Article 37 Opinions:
  - 30-5-2012 Hinkley Point C Waste Storage Facilities (new build)
  - 3-2-2012 Hinkley Point C Nuclear Power Station – 2 reactors (new build)
- EDF Energy projections based on DECC's 2012 Energy & Emissions Projections, updated in October 2012
- "Benefits from infrastructure investment: a case study in nuclear energy", IPPR Trading Ltd report for EDF Energy, June 2012
- EDF Energy Hinkley Point C Application for Development Consent, October 2011
- "Public Opinion Poll Shows On-Going Support For Nuclear" Nuclear Industry Association Press Release, December 2012
- "Support for nuclear energy bounces back" EDF Energy Press Release, June 2012
- "Regulators approve new nuclear reactor design in UK" EDF Energy press release, 13 December 2012
- AREVA and EDF UK EPR™ – Generic Design Assessment website.

## Contact us

**We would be happy to talk to you about the project. Please feel free to contact:**

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Visualisations of completed development are illustrative, and subject to planning approval.

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Designed and produced by Design Motive.

