CPRE annual lecture 24/03/2011

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Introduction

Thanks very much. I'm delighted to be here today.

Eighty-five years ago, a small group gathered here in London changed the landscape of Britain forever.

Led by a reluctant statesman, they published a document whose impact on the countryside is felt to this day.

I am not referring to Sir Patrick Abercrombie and the pamphlet he wrote that brought the CPRE into existence.

No, I speak of Stanley Baldwin's government – and the Electricity Supply Act of 1926.

In creating the Central Electricity Board and the first national grid, the Act brought Britain into the modern age.

Our history

For electrification is one of modernity's defining achievements.

It is the cornerstone on which our technical progress rests; everything from the washing machine to the scanning electron microscope depends on it.

And when the world's first public electricity supply was connected – in 1881, in Godalming – it marked a fundamental change not just in our landscape, but in the social contract.

From that day, it became increasingly clear that government had a core responsibility to ensure electricity supplies are safe, secure and affordable.

In the past, we did so with coal and gas.

Now, we are looking toward a low-carbon future. One where clean, green power keeps the lights on and the skies clear.

There are many different paths to that destination. Each will bring about real changes.

The energy choices we make now will determine the shape of the landscape for generations to come.

Primary fuel

This is nothing new.

Throughout our history, our choice of energy has affected our environment.

The fuel that has driven economic and social progress has also driven change on our landscape.

Six thousand years ago, three quarters of Britain was woodlands. By the time of the Domesday survey, forest cover in England had fallen to just 15%.

Trees were cleared to make way for food; to build houses, weapons, and ships. By 1700, we were dependent on imported timber. Britain's ancient forests were stripped bare.

When the Industrial Revolution began, charcoal was used to smelt the iron on which Britain's prosperity was built.

The Forestry Commission estimates that a single furnace needed 10,000 acres of deciduous woodland to run.

A new addiction

In the nineteenth century, everything changed again. Industrial progress meant coke and coal were now the fuels of choice. And so our landscape was altered again.

By 1900, over 200 million tonnes of coal were being mined in Britain. Nearly a million people were employed in over 3,000 mines.

Surface coal mining only peaked twenty years ago. In 1991, 17 million tonnes of coal were open-cast mined at 135 sites across in the UK.

Our hunger for coal left deep scars upon the landscape, some of which remain to this day.

And it brought serious consequences for the wider environment.

It is no coincidence that the term 'acid rain' was coined in Manchester by a Scottish scientist.

Nor that coal – and its contribution to London's 'Great Smog' – resulted in one of the first pieces of modern environmental legislation, the Clean Air Act of 1956.

Changing, again

In the half century since then, our energy mix has become more diverse.

As British coal production tapered off, nuclear power and natural gas plants have helped provide us with cheap and secure energy. And with full electrification in the 20th century came the National Grid, power stations and pylons.

Now we face another change. Over the next decade, we must rebalance our energy system.

A quarter of our nuclear and coal power plants will shut down by 2020.

In the face of tough global competition and a difficult financial environment, we must attract record investment in new energy.

More than £110 billion is needed for new power stations and grid upgrades over the next decade.

Not just to meet growing demand and shrinking supply – but also to meet our climate change targets.

By the end of this decade, the UK must cut its carbon emissions by 34% on 1990 levels. And we must generate 15% of our energy from renewables.

English impacts

It's important not to forget why we are doing this.

As the Chief Executive of Natural England said, climate change is 'the biggest issue facing the natural environment'.

I am, of course, am preaching to the converted.

Two years ago, the CPRE supported a study that looked at how a changing climate could change the landscape.

In South East England, beech trees could be badly affected. Pomegranates and olives could replace potatoes and onions. And the hedgehog could disappear from the South East in just 15 years time.

This isn't just about future risk either. It's already happening. As Natural England has observed, the timing of natural events is changing.

Spring comes sooner. Autumn lasts longer. Habitats are changing and species distribution is changing with it.

And earlier this year, researchers found that human greenhouse gas emissions may have roughly doubled the chances of the autumn 2000 floods.

We can now clearly link extreme events and their effects to the rise in man-made greenhouse gases.

So let's be realistic: climate change is not just a far-off possibility, unlikely and impossible to foresee.

It is happening now, with every barrel of oil we burn and every tanker of gas we use.

The threat posed by climate change is simply too big and too close to ignore. It is a global problem with local consequences.

Response

That means yes, we must do everything we can on the international stage to get an agreement to cut carbon emissions.

But we also have to make the case for the low-carbon revolution here at home.

We need a diverse, secure and sustainable energy mix, delivered with long-term strategic oversight. Providing clean, green energy to 2050 and beyond.

Electric demand

Our plan for low-carbon energy rests on four pillars.

The first is renewables – like onshore and offshore wind, biomass, energy from waste, solar, marine and micro hydro power.

The second pillar is new nuclear – without public subsidy, and with liabilities covered by developers, who will pay the full cost of waste disposal and decommissioning?

The third pillar is clean coal and gas, delivered by carbon capture and storage. Giving us flexible and reliable energy – without the carbon consequences.

The important thing is to spread the risk, rather than putting all our eggs in one basket. It's the same principle as managing a pension fund.

To encourage low-carbon investment, we are changing the electricity market.

Under our proposals, all low-carbon technologies will benefit from support by virtue of being low carbon. Pioneer technologies like wind, wave and tidal stream will get extra support.

There will be a capacity payment, to make sure we can meet peaks in demand – like the infamous ad break in Coronation Street, when everyone gets up to put the kettle on.

We'll send out a clear signal with an emissions performance standard to keep our power plants clean. And the Treasury has announced a carbon price floor to underpin our signal to the marketplace – and to encourage low-carbon use of existing plants.

Saving energy

The final pillar of our plan is energy saving.

We have the oldest housing stock in Europe. We use more energy heating our homes than Sweden, which is nearly five degrees colder on average.

That's why our flagship programme is the Green Deal, a nationwide home improvement scheme to bring our houses up to 21st century energy efficiency standards.

It is the most comprehensive energy-saving plan in the world.

And it can make a real difference.

Heating is the second biggest driver of energy demand in Britain. Better insulated buildings can help us cut into that carbon overhead.

So can renewable heat. That's why we're supporting renewable heat technologies like biogas boilers, solar thermal and electric air and ground-source heat pumps.

The key thing about our plans is that they will be flexible, letting us choose the lowest carbon energy sources at the lowest possible cost.

That flexibility will be critical. Because nobody knows what the energy mix will look like in forty years time.

Early stage technologies like tidal power may be long established.

Interconnectors could flourish, allowing us to trade natural resource strengths with our European neighbours.

Concentrated solar power in the Sahara could create enough electricity for two continents.

A technological revolution could deliver deep offshore wind at rock-bottom prices.

Options

We cannot predict exactly what combination of energy technologies will power Britain in 2050.

But we know the carbon boundaries we must stick to if we are to keep global temperatures to within two degrees of pre-industrial levels. And we can estimate the kind of energy demand we will need to meet.

Once we know where the finish line is, we can start to trace backwards and discover what the course might be. And then we can begin to engage the public with the scale and shape of the changes that will deliver it.

When the challenges are better understood, then we can have a meaningful discussion about how we will get there – and what kind of trade-offs we might have to make along the way.

Consequences

That's the fundamental premise of DECC's 2050 Pathways project, which looks at the choices and compromises we must face on the way to our energy future.

There is no silver bullet that will solve our energy problem. We will have to make some difficult decisions.

There will be trade-offs. Because every energy resource has its plus points – and its drawbacks.

Onshore windfarms demand careful location and siting. Tidal stream and wave power are still in their infancy.

For biomass to make a meaningful contribution it will need to cover much of the countryside.

Hydroelectric power can help us get to a greener future. But it cannot deliver the level of clean energy we need.

Our analysis shows that at the very top end of ambition, hydro could deliver just 3% of today's electricity.

Nuclear power means tight safety standards and a long legacy. Carbon capture and storage is yet to be demonstrated at scale. Interconnection needs interconnectors.

Some technologies will fall by the wayside as costs or progress make them unsustainable. Others will improve fast. A few weeks ago I visited Delabole, the UK's first windfarm. Ten turbines have been replaced by four – at twice the height and double the output.

And once electricity has been generated, it must be transmitted. Again, there are no simple solutions. Whether you wish to see electricity carried above ground by pylons or buried within the earth in cables, there are environmental – and economic – consequences.

And in a world with more renewable energy, balancing the grid becomes more challenging. We'll need to look at pumped storage, demand management, smart grids and capacity payments – all the things that can help even out the peaks and troughs.

Even energy-saving measures have a price. Air source heat pumps could change the way our homes look.

To make our consumption and production add up, we will need a portfolio that includes a little bit of everything – and a lot of some things.

The Pathways project is looking at some of these options. So far, it has unearthed many different possible routes to 2050.

At the moment, there are no cost projections. But the point of the Pathways project is to get people engaged with what is physically possible – and what the implications are for our homes and our natural spaces.

The 2050 calculator lets you figure out your own energy mix.

Whether you want a little more wind, or a lot more nuclear, or extra energy saving. If you haven't already, I highly recommend having a go. It can help put our energy choices into context.

Impact

Because the reality is that the scale of the problem – and the potential solutions – means our landscape will change again, just as it did during previous industrial revolutions. It is inescapable.

But we must keep remembering the rationale. You cannot keep things the same based on unsustainable energy. If we are to conserve the best of our past, we have to embrace the low-carbon future.

Done right, energy infrastructure can enhance the landscape.

The most popular tourist attraction in my constituency, as I never tire of telling my more sceptical Parliamentary colleagues, is a windmill. It grinds corn rather than generates electricity.

So our challenge is to make sure this energy revolution is more sustainable – and more beautiful – than previous revolutions.

But how can we deliver new energy infrastructure with the least impact and the most sensitivity?

The first step is to listen to the experts. CPRE have been intelligent and vocal advocates for their cause, offering realistic and detailed criticisms and responding to consultations.

I know that the uncertainty I mentioned about which technologies will get us to the future can be anathema to the conservationist.

But in fact we share a similar aim: to manage change. Just as England's landscape evolves, with CPRE and other conservationists taking on the mantle of stewardship, so our energy system will evolve. And we want to make sure we leave as small and as soft a footprint as we possibly can.

And although I talked about letting technology and innovation decide where our electricity will come from, we are not simply letting market forces loose upon the countryside.

We may be flexible about the exact method of travel, but we are clear about the rules of the road. We do not wish to impose energy solutions on anyone.

Wherever possible, we will make balanced decisions that take account of landscape and environmental impacts.

So on offshore wind, new developments will be assessed strategically as part of a rolling programme of offshore energy strategic environmental assessments, and will be checked again at the consent application stage when environmental impact assessments are carried out for specific projects.

When it comes to onshore wind, communities should be protected from unacceptable impacts. The new National Planning Policy Framework will apply to energy developments up to 50 megawatts; the Department for Communities and Local Government will be consulting on it over the summer, so get in touch and let my colleague Eric Pickles know what you think.

Sites for potential new nuclear power stations are subject to a strategic siting assessment.

As part of this, the Government looks at impacts on cultural heritage and landscape value. Where a site falls down, such as at Braystones and Kirksanton in Cumbria, it may be rejected.

And when it comes to how electricity will be moved around the country, we need to strike a balance between the economic and environmental impacts.

To meet our 2020 renewable energy targets – and make that contribution to fighting climate change – the transmission system will have to expand to allow new renewables to plug in to the grid.

Grid costs can sometimes mean wind farms are put where the electricity is needed rather than where the wind is strongest.

Ofgem is looking into this as part of its review into transmission charges, which will conclude later this year.

We're also making big changes at the top level. Once finalised, our consultation on the revised draft national policy statements will form the policy framework for big decisions on nationally significant infrastructure projects.

The national policy statements will bring together social, environmental and economic policies in one clear, robust and transparent system.

It's about developing a consistent and a coherent strategic rationale for the way we decide on new infrastructure.

This kind of clarity and openness is a first. By getting public and stakeholders like the CPRE involved, we are opening up big decisions more than ever before – and working with people so we can get buy in.

Sometimes, national need will mean we have to sit down and take a tough decision about local impact.

I know CPRE is acutely aware that it's where we draw the line between need and impact that matters. But with a more consensual framework drawn up with our partners and the public, you will always have a voice in the room.

I want to thank CPRE for taking the time to offer such a detailed response to the consultation.

And I want to reassure you that we are not going to wantonly plant windfarms across the country at random. In the next few months, we'll publish the Renewables Roadmap – the first detailed step-by-step plan to deliver renewable energy.

It will take a practical approach, looking at deployment systematically, identifying specific barriers and setting out how to overcome them.

It will show how we will meet the 2020 renewables target.

And it will set out milestones and metrics that enable us to monitor deployment progress and respond if we are falling behind our ambitions.

Rather than being a fixed document, it will be flexible; evolving and changing as renewables come online.

Questions

I hope today I have given you a sense of how we might deliver clean, secure energy to 2050 – and what it might mean for our landscape.

By way of conclusion, and before we get to the Q&A, I want to ask a few questions of you.

Firstly, I would ask you all to think about the trade-offs you would make to guarantee the long-term survival of our landscape, the security of our energy supplies, and the affordability of our electricity for all.

It is a question of where we choose to draw the line. That is a personal decision, but one that means thinking about the wider consequences.

At the moment we buy gas that is easily extracted. But under some scenarios, we could end up relying more on shale gas. If we choose to rely on imported energy, we run the risk of ignoring the embedded costs. Is it morally sustainable to simply outsource our energy impacts to another country?

What is conservation?

And I wonder whether there is a more basic question here: what are we actually conserving?

As the President of the CPRE said in his inaugural speech, the English landscape is 'almost entirely manmade'.

This is not a pristine natural environment, preserved in stasis. Rather, the CPRE is protecting a series of snapshots taken throughout our long and mutable history.

And from the beautiful medieval field patterns of Devon to the causeways of East Anglia, human fingerprints are plain to see. Rural England is often a vision of how we want things to be; a vision that we have exported across the world.

Perhaps energy infrastructure can be part of that vision.

Norfolk’s windmills, Kent’s oast houses and Westmoreland’s watermills are an integral part of our countryside. If we strike the right balance, perhaps the next generation of green energy will leave a similar legacy.

Conclusion: a return to sustainability

We know the choices we make about energy infrastructure stay with us for generations.

For proof, you need look no further than Dean’s Yard, two miles away to the west. It is still lit with gas lights.

Our current energy system is costing the earth. That is why it is so important to get it right.

Think about the grand prize. Cleaner air. More affordable energy. Less risk of climate change. A greater degree of energy independence.

For the first time since the 18th century, we have a chance to return to a true sustainability: one that does not see low-carbon generation as destructive to the economy or the environment, but as fundamental to the integrity of both.

Thank you very much.