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Learnings from a Public-Private Partnership in the UK

Energy systems - an integrated effort

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What is the ETI?

ETI technology programme areas



ETI members



CATERPILLAR®



Rolls-Royce




Department for
Business, Energy
& Industrial Strategy

EPSRC
Pioneering research
and skills

ETI programme associate

HITACHI
Inspire the Next



Who does the ETI work with?





What we offer



System Analysis

Whole energy
system modelling
and analysis



Innovation

Technology innovation
management and road
mapping



Delivery

Delivery of complex
energy innovation
projects



Building a shared evidence base...

ETI Firsts

Building the world's largest wind turbine blades
30% lighter with 5% more energy yield



Offshore Wind

Vehicle designs
for 34% fuel
efficiency
improvement
across UK HDV
fleet



Transport



Bloenergy

Largest UK
investigation
into soil carbon
effects following
land use
transitions



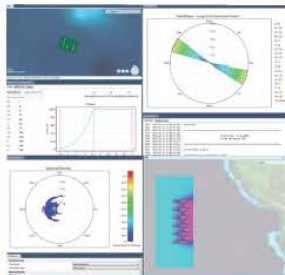
Offshore Wind

MOU to incorporate up to four
ReDAPT turbines within
Sound of Islay tidal array



Marine

Validated
software tools
predicting
energy yield of
tidal and wave
sites - in use on
current UK
projects



Marine

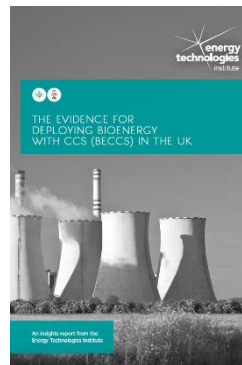
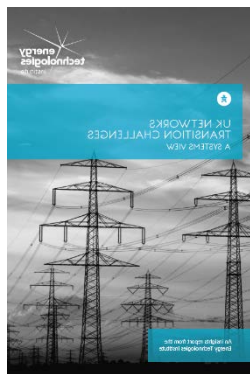
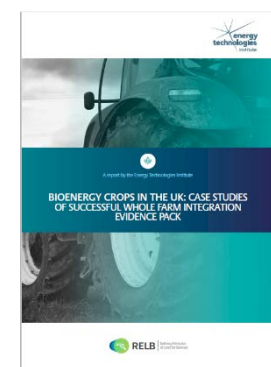
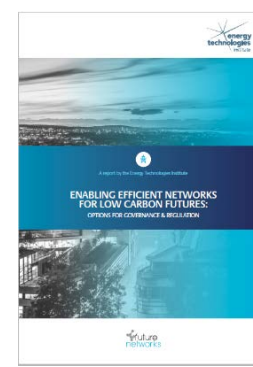
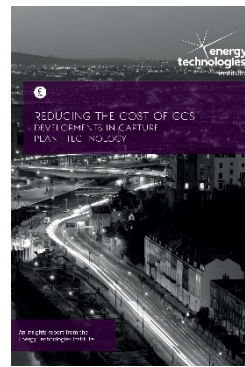
15% cost
reduction on
offshore wind
through floating
platform design



ETI Insights across the whole energy system



ETI findings and insights used in national consultations every 2 months, major advisory body reports every 6 weeks, HMG policy reports every 3 weeks, third party citations every day





Managing public private partnerships – learnings from the UK experience



Connecting corporate strategy, policy priorities and technology investment decisions through a shared framework

- The value in the debate – at multiple levels
- Understanding the big picture
- Valley of death investments
- Technology improvement vs roadmap to competitiveness
- Transparent and agreed criteria for the prioritisation of investments
- Knowledge vs IP in technology

Tactical vs Strategic Decision making



One route to meeting - 80% CO₂ for the UK

Power now, heat next, transport gradual – cost optimal



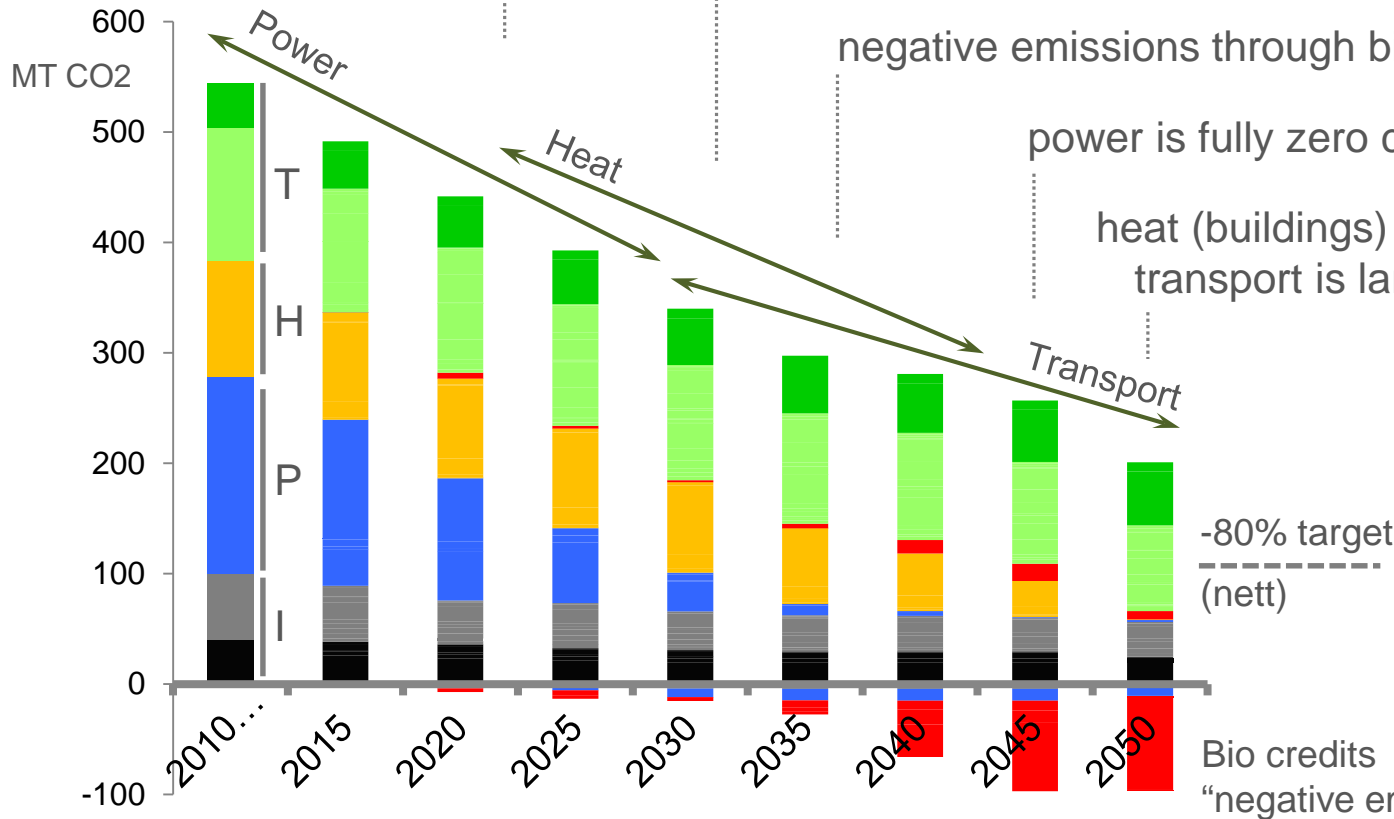
CCS commercialised, renewables & nuclear deployed

heat emissions (buildings) reducing as domestic gas boilers swap to electric, H₂ or district heating

negative emissions through bioenergy + CCS

power is fully zero carbon

heat (buildings) almost zero carbon, transport is largest CO₂ emitter





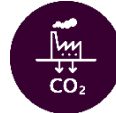
Priorities to 2030



Decarbonising electricity



- Nuclear
- Offshore Wind
- Gas (CCS)
- Bioenergy
- Smart Systems



Proving CCS in UK context



- Power
- Heat
- Industry
- Hydrogen
- Negative emissions



Testing 'next step' options eg



- CCS (gas / biomass)
- Bioenergy
- Hydrogen
- Small Modular Reactors
- Low carbon heat solutions

+ efficiency
+ storage



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