

The **co-operative** bank
good with money

Renewable Energy & Asset Finance (REAF)

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Community Projects: Three key themes

The **co-operative**

"Children should be allowed to learn and play, and not be pushed into adulthood."

Share your views, shape our communities.



The **co-operative**

"We should be supporting wind and solar power as alternative energy sources."

Share your views, shape our communities.



The **co-operative**

"The world's poorest want to be able to help themselves, we should be a part of that."

Share your views, shape our communities.



The Co-operative Group & Renewable Energy

- . Coldham, Goole, & Bambers wind farms.
- . Torrs Hydro, New Mills
- . CIS tower: largest commercial solar installation in Europe
- . Green Energy for Schools programme.



Calling at a stop near you.
Ask in school for details.

The **co-operative** good for everyone



The Co-operative and Renewable Energy

- Energy efficiency drive: 25% reduction by 2012 (2006 base)
- Electricity procurement - 99% green
- “Home Generation”
- Wind Power
 - 58MW built or consented (>15% of use)
 - 52MW in planning
- Solar: largest PV Array in UK (CIS Building)
- Future: more wind & biomass, anaerobic digestion

Co-operative Bank: Who we are

Co-operative Financial Services (CFS)

- 5.5m customers, 8000 employees
- £38 billion in assets

Post Britannia merger

- 9m customers, 12,000 employees
- £70 billion in assets

CFS is itself a subsidiary of the Co-operative Group family of businesses

- World's largest consumer co-operative
- Turnover £9 billion, 87,500 employees
- Unique customer-led ethical policy guiding investments
- Committed to leading the way on ethical, environmental & community matters

Our values

- Social responsibility guided by co-operative values & principles:
self-help, self-responsibility, democracy, equality equity & solidarity

Products: Our commitment to climate change

Green Mortgages

- Support Climate Care projects worldwide,
- Offsetting a fifth of Green Mortgage customers' household emissions
- (2007: over 50,000 tonnes at a cost of over £279,000)

Insurance:

- Offset 20% car insurance customers' emissions by **investing** in environmental projects.
- Ensure repairers reuse and recycle material where possible.

Renewable Energy:

- Fund embedded schemes from £50,000 to £15 million.
- Wind, hydro, CHP, biomass, anaerobic digestion, landfill gas, geothermal, solar.
- Energy efficiency technologies such as smart metering.
- Estimated carbon savings of 264,500 tonnes

REAF Team: Our history

- Formerly known as Asset Finance, first investing in renewable energy through **CHP** schemes.
- Moved to **district heating** schemes that used **CHP**, to tackle fuel poverty & create affordable warmth.
- Followed by our first venture into **biomass**.
- Next invested in our first **wind** scheme, quickly followed by numerous other **wind** schemes.
- More recently began investing in **hydro** schemes, and **anaerobic digestion**.
- Constantly evolving & expanding our investments.
- Demonstrating continuing knowledge of renewable energy technology market.
- £150 million invested to date

Our investment beliefs and aims

- The delivery of heat and cooling as well as energy generation
- As passionate about heat, as electricity
- Energy efficiency and the efficient use of resources
- Alleviate fuel poverty and focus on affordable warmth
- Aim to reduce carbon footprint in the UK
- Dedicated to developing co-operative ownership models with community benefits

Renewable Energy & Asset Finance (REAF)

“Our belief is in energy efficiency, embedded generation and the delivery of heat.”

What we've done

- Energy Efficient Boilers
- Combined Heat & Power
- District Heating
- Wind
- Biomass
- Hydro

Who we've worked with

- NHS Trusts via Vendor Schemes
- Private Companies
- Charities
- Local Authorities

What we propose to do

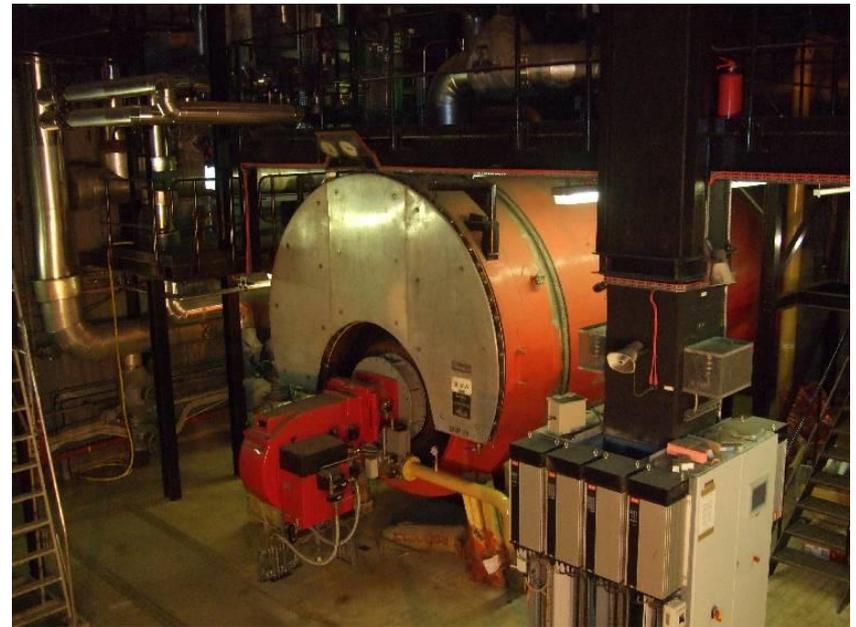
- To offer “delivery mechanisms”
- Project Finance
- Vendor Option
- ESCO Option
- Community Option
- Operating Lease Option

Our Public Sector Involvement

- Currently bankers to 133 Local Authorities and many wider public sector bodies
- Recognised as Public Sector Specialists 31% of market share and 33% of volume.
- Specialist Public Sector Team – solely manage public sector connections

Natural History Museum

- The Bank contributed £3.568m in funding, working alongside Vital Energi Utilities Ltd (ESCo)
- Vital Energi responsible for design, build, finance & operation.
- Trigeneration CHP scheme 1.8MWe.
- Two absorption chillers of 750kW each, and two new cooling towers



Map



- Buildings at bottom (south): **Natural History (left), Science Museum (right).**
- Across Cromwell Road is **Victoria & Albert Museum (bottom far right).**
- Heat distribution system from NHM historically served NHM, Science Museum, Imperial College and V&A.
- Science Museum & Imperial disconnected some time ago, so now only serves NHM and V&A.
- HV electrical distribution system & ring main still in use.

NHM historic position & proposed solution

- NHM supplied heat to V&A via historic charging mechanism
- Central Boiler House was overcapacity, required major investment: £2.5m in sinking fund
- Existing MPH/MTHW system was costly to operate: Pressure Regulations
- Utility prices dramatically rose in previous 12-24 months: Budget strain
- NHM appointed ESCo development specialist Cynergin Consultants as procurement advisor
- NHM selected Vital Energi Utilities Ltd as their preferred partner
- Project delivers £3.5m of new capital investment and services
- Transfer of significant performance risk for 15 years



Project Details

- New 1800 kW Combined Heat and Power plant in NHM CBH
- Upgrading of two existing boilers with new burners and controls
- Conversion of existing pressurised distribution system to safer LTHW
- Conversion of 17 secondary heating systems at the V&A
- Conversion of 12 primary heating circuits at the V&A
- Conversion of 11 secondary heating systems at the NHM
- Conversion of 11 primary heating circuits at the NHM
- New 705 kW absorption chillers to provide cooling for NHM Darwin Centre II
- Comprehensive maintenance of CHP for 15 years
- Energy Saving Performance Guarantee for 15 years

Benefits

- Projected savings of £500,000 for 1 year, actual savings £650,000
- 1,300kWe CHP engine showed a £3 million payback over 15 years.
- **C0₂ reductions of 1500 tonnes pa**
- Improved efficiency to between 80-85%



Westmill Wind Farm, Oxfordshire

- The Bank contributed towards funding five 1.3MW turbines on old airfield
- The first of their kind in South East England.
- The project is set to produce pollution-free electricity for over 2,700 homes for 25 years.
- Westmill Co-op is a member of Energy4All co-operative, first initiative of its kind in a decade.
- Energy4All is the UK's leading expert in community-owned renewable energy schemes.



Benefits

- Renewable energy to power 2,700 homes
- Community-led
- Ethical investment opportunity
- Regeneration of land



Aberdeen Heat & Power – CHP

- Public Sector
- £1m of Bank support for installation of a CHP energy centre
- Energy savings generate additional revenue
- Revenue used to alleviate fuel poverty
- The Local Authority purchases the excess energy

Benefits

- Alleviating fuel poverty
- Substantial reduction in fuel bills
- Better quality of heat for the building
- Infrastructure is future proofed
- Biomass boilers to be installed in next phase



REAF Future Funding

- Embedded energy generation to support communities
e.g. biomass, anaerobic digestion and microgeneration
- Waste to energy projects
- Energy savings technology (lighting, building controls, metering)
- Trigeneration using CHP
- District heating schemes
- Alleviating fuel poverty through ESCo models
- Geothermal & solar technologies
- Further wind and hydro projects.

Thank you

The **co-operative** bank
good with energy