



Developments in Community Renewables

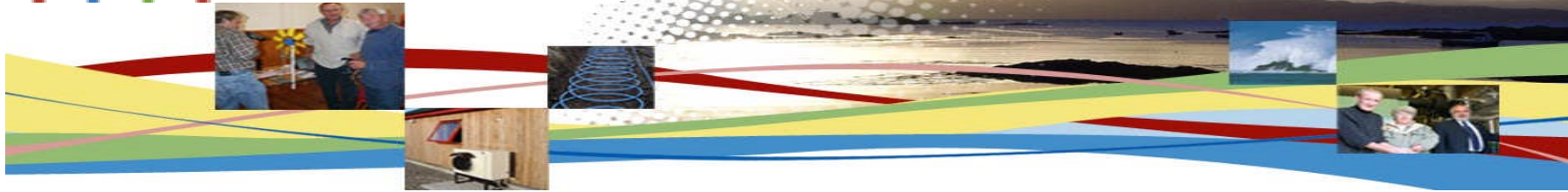
<http://www.communityenergyscotland.org.uk>

Scottish Charity Number: SC039673

Scotland's Community Energy Development Charity



Community Energy Scotland
 Cumhachd Coimhearsnachd na h-Alba



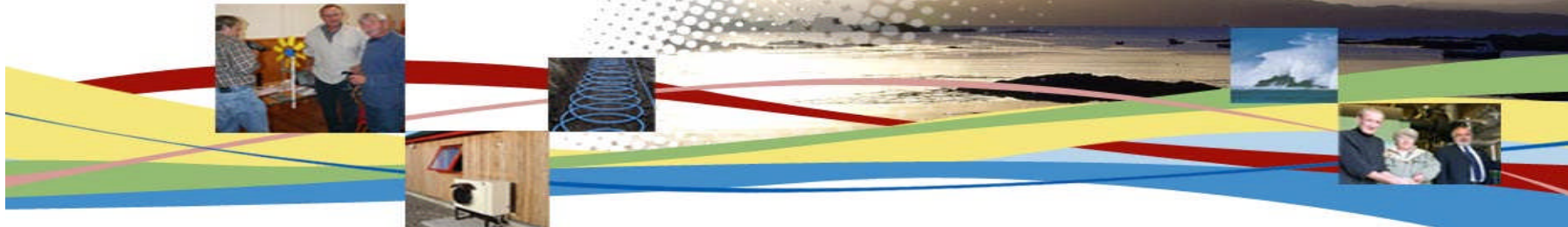
1	2	3	4
local developments providing opportunities for local private investors and 'small' investors nationally	joint ventures arrangements between private and non-profit distributing companies	developments by non-profit distributing bodies on behalf of all people in a community	'community benefit' arrangements with private commercial developers
Eg: co-ops, rural businesses	Eg: private landowners and local development trusts	Eg: local development trusts, community interest co-ops	Eg: wind farm community benefit payments

For profit.....Non-profit.....



Support voluntary, non-profit groups and schools to develop renewable energy and low carbon projects – over 600 groups in 2009-2010





Making the case locally and nationally for a policy environment which helps community energy projects to succeed, eg:

- FIT, RHI consultations
- Lottery
- making the case for infrastructure solutions





Community Energy Scotland
Cumhachd Coimhearsnachd na h-Alba



supporting groups to interact and transfer knowledge,
expertise and enthusiasm through our growing membership



Our operations:

- Delivery of Service Contracts
- Development of our charitable activities
- Development of our trading subsidiary

Key part of role: to facilitate effective working between community groups and suppliers, consultants, manufacturers, planners and other regulators, and their wider communities





Development of our charitable activities:

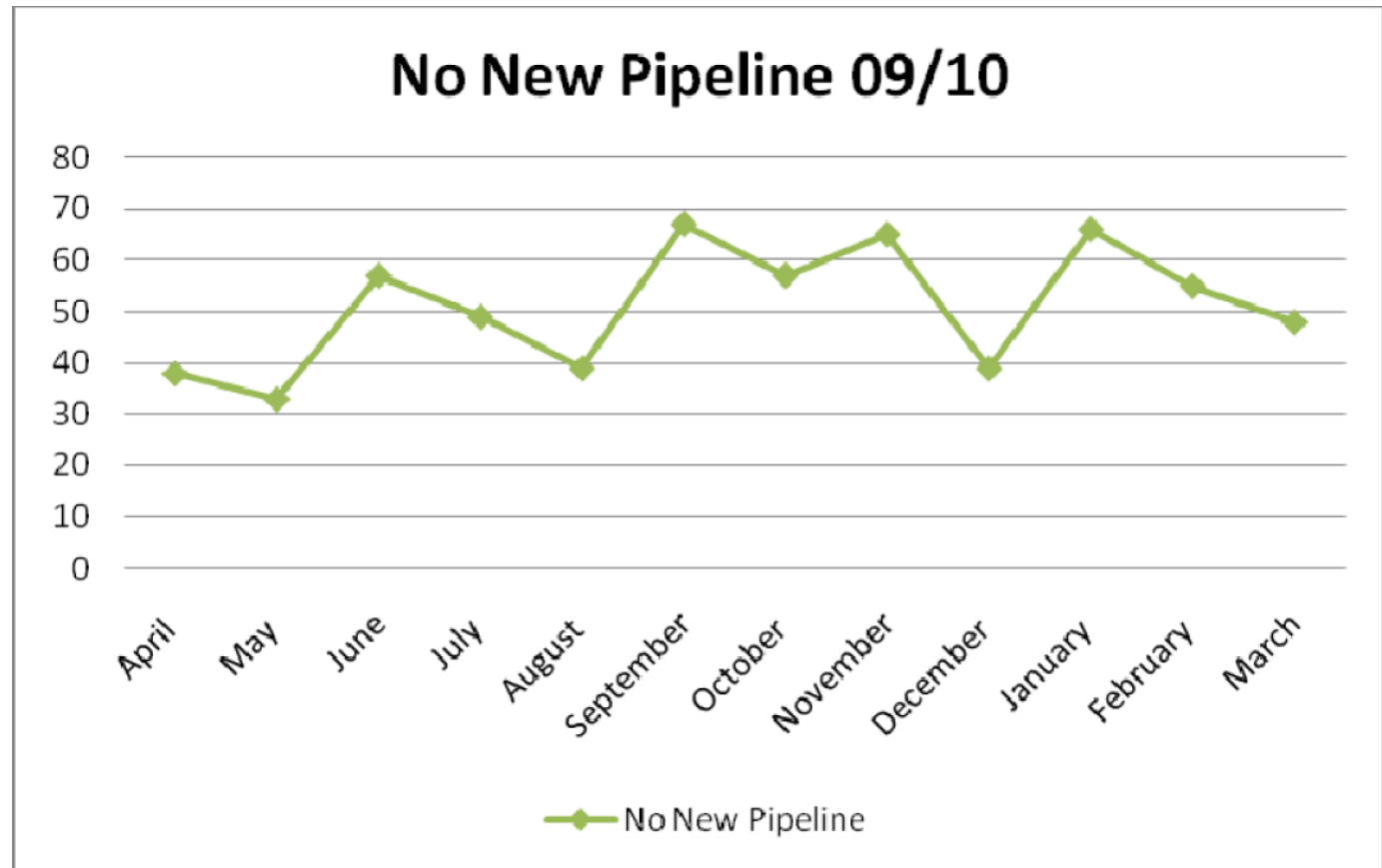
- volunteer programme
- district heating
- local generation – local use
- road-show
- renewable transport
- schools and education
- international - Malawi



Community Energy Scotland
Cumhachd Coimhearsnachd na h-Alba



Demand:





The Development and Growth of Community Energy

All-ENERGY 19th May 2010

**Eric Dodd – National Projects Manager
Community Energy Scotland**

<http://www.communityenergyscotland.org.uk>

Scottish Charity Number: SC039673



Communities play an important and critical part of the “Renewables Revolution”

- Over £40m brought into renewables through SCHRI and CARES
- Big Lottery and Powerdown £13m
- Over 1000 community based projects across Scotland
- 3 operating Community Owned wind turbines. Gigha, Tiree and Westray capable of breaking production records
- Over 163 MW of community own generation in development



Highlights (in no apparent order)

Community Turbines on Gigha, Tiree Westray

Pure and development of Renewable Hydrogen in Unst

The Electricity System on Eigg

Wind2heat

Community Energy Conferences

Training 150 solar panel installers, Micro-generation Training Centre in Inverness

Development of wood fuel Industry



Highlights (contd)

Enercon deciding to supply turbines to Orkney

Powerdown

Planning permission and funding for Community Revenue generating Projects In Orkney and Western isles.

Greater understanding of energy issues

Communities taking on more projects

Ullapool swimming pool Solar Project- Commonwealth pool solar project

Solar projects in Midlothian and Fife.

Water sourced heat pump Tall ship in Glasgow

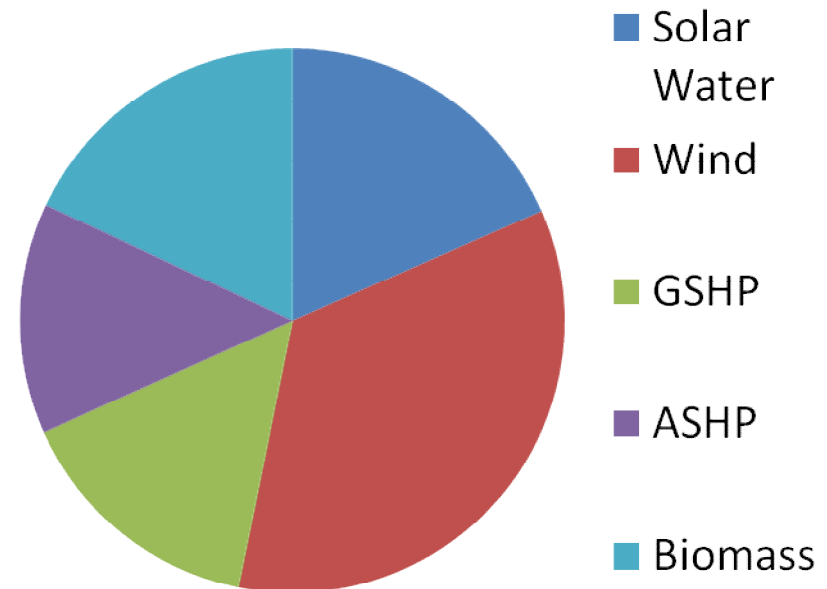
And numerous small projects throughout Scotland where the Community energy has made a difference.

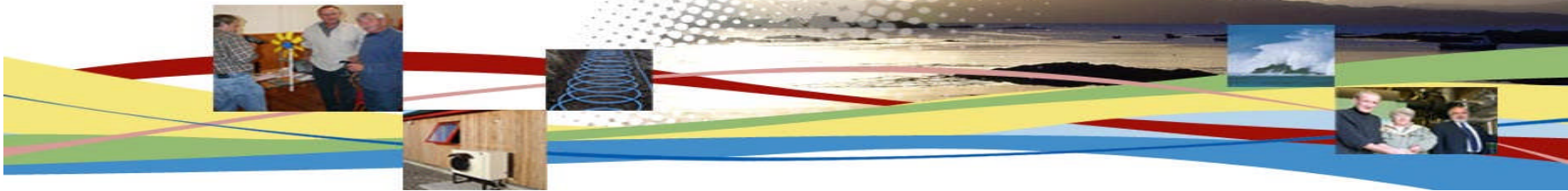


SCHRI/CARES to date

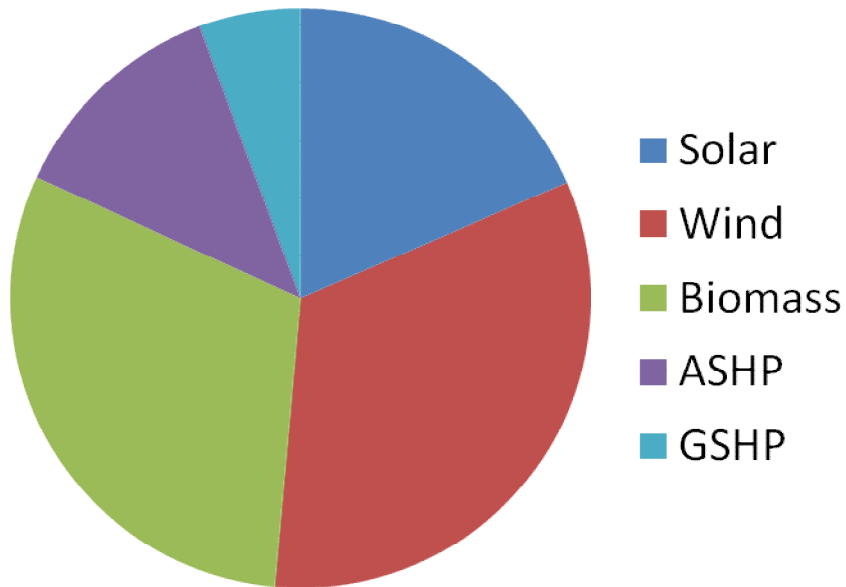
- 1076 projects supported through SCHRI and CARES
- 623 Capital projects
- 453 Technical/Capacity projects
- Over £20m approved grant funding with match funding means over £40m for projects

Technology by Projects





Technology by Value



CARES 2010

- £6.6m spend across 351 projects
- 286 projects approved to a value of £6.86m
- 335 projects in development stage.
- 13.2 GWh of renewable generation



Revenue Generating Projects

- 121 projects in total 110 clients
- 5 complete/installed projects
- 25 with planning permission (including the 5 completed) for over 38MW
- At least 49 feasibility studies complete
- At least 13 projects with firm grid offers (including the 5 completed)
- 118 projects in development!
- Total MW installed or in development is an amazing 163MW Hydro and wind.





Community Powerdown

- 25 community based development officers
- Plus 10 additional FTE posts
- £6.5 m of projects for activities that reduce CO₂ and energy use.
- 43 City and guild qualifications in energy efficiency and renewables





Performance Monitoring

50 monitoring systems across Scotland installed with Monitoring kit measuring energy in and energy out along with energy usage in community buildings.





Other work of Community Energy Scotland

- Community Energy Scotland inputs into UK and Scottish energy consultations on behalf of communities.
 - Feed in Tariff
 - Renewable Heat Incentive
- Grid issues ensuring communities have fair access to the grid.
- Securing funding for communities like CARES, Big Lottery Funding Growing Community Assets, Social Investment Scotland
- Representation on Scottish Government Working Groups



Moving Forward

- Continuous improvement and innovation of installed kit
- Not cheaper but better value for money heating
- More communities taking forward projects.
- Communities working with developers particularly in district heating opportunities.
- Communities taking a bigger part in the renewables revolution
Joint ventures, district heating schemes, transport systems, local distributions systems, controlled systems matching demand with supply .

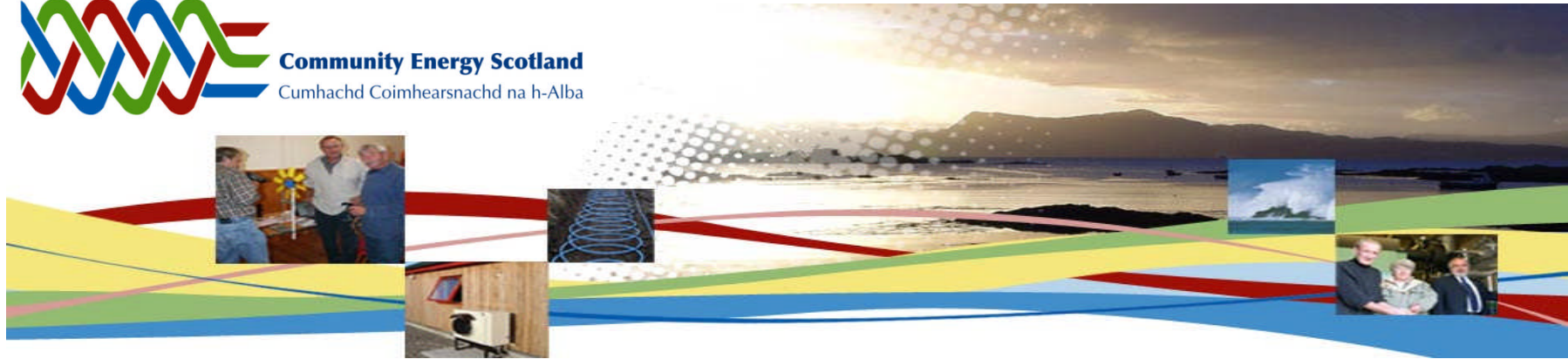


Issues

- Quality and honesty is key
- RHI and FITS is not the complete solution
- Need to think of local energy use not just feeding the grid
- Education is key
- Communities can achieve a lot with more help and guidance they can achieve a lot more which will benefit every one and make our renewable industry stronger.



Community Energy Scotland
Cumhachd Coimhearsnachd na h-Alba



Renewable Technology Performance

Daniel Portsmouth – Monitoring & Evaluation Development Officer
Community Energy Scotland

Our Involvement....

- A broad range of technologies monitored for performance.
- Covering a vast geographical area.
- Over 50 projects monitored & over 50 more planned– a fraction of projects dealt with by CES.

Why do we monitor performance?

- To ensure the technology is installed and functioning correctly, in accordance with manufacturers claims.
- To assist in achieving the highest efficiency as possible.
- To detect premature signs of failure.
- To accurately quantify real world energy and CO2 savings.
- To use and share as a resource for future projects.

How do we performance monitor?

- Incorporate metering into supported projects.
- Work with community groups to record readings from the meters.
- Use Web-accessible meters and data logging devices.
- Collate and manage an in house database of performance figures

ASHP Example – Kyleakin Day Centre

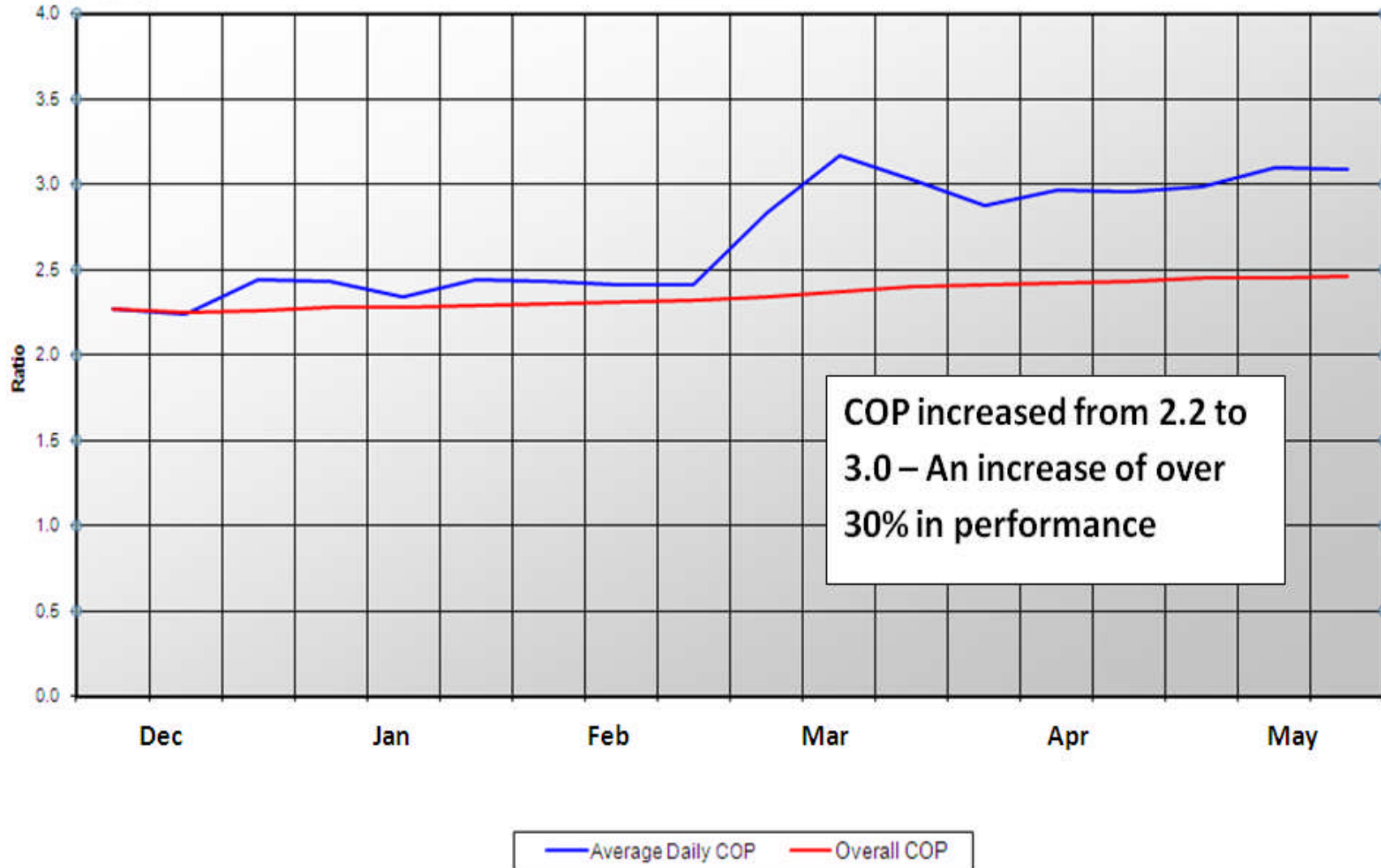


- Air - Water Heat Pump for space heating
- 14kW Nibe unit
- Electric and heat metering installed
- Accurate C.O.P measurement to help optimise system performance
- Increased efficiency & reduced costs



ASHP Performance (COP)

Kyleakin Day Centre



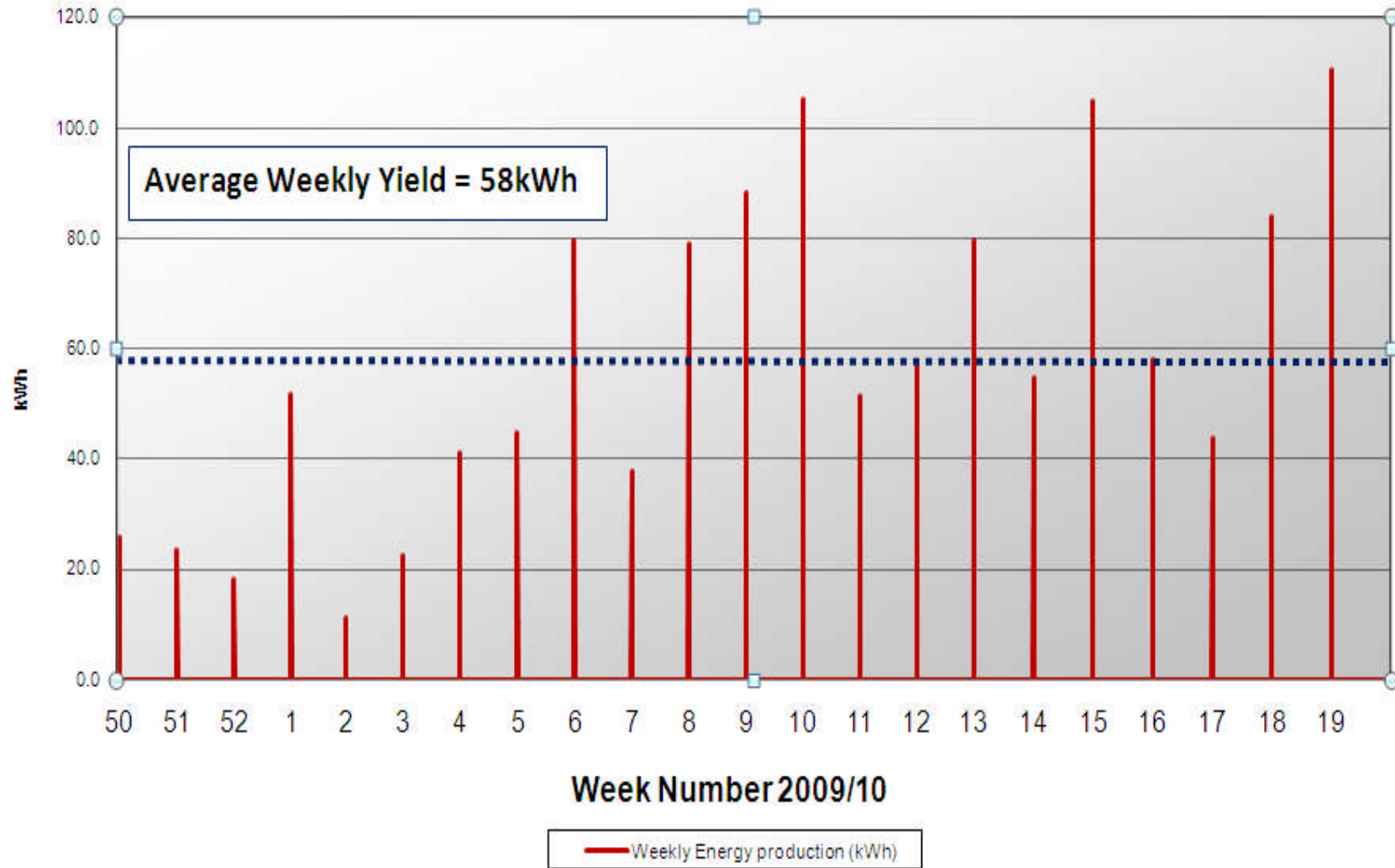
Solar Thermal Example – Eigg Pier Centre



- Solar thermal feeding DHW
- 6.5m² Evacuated tube array
- Estimated annual yield 4000kWh
- Solar heat metering device enables heat output quantity in kWh
- Built in logging device captures kWh readings
- Data transfer using standard SD memory card

Solar Panel Performance (6.5m Squared)

Eigg Pier Centre



Renewable Projects- Identified Issues

- Quality of installations
- Identification of appropriate need and application of technology
- Education when considering options
- Education in best use of technology
- Perception sometimes incorrectly influenced

How can the industry help?

- Correctly identify the right technology for the application.
- Be clear and concise about what can be expected.
- Educate the end user.
- Offer support to optimise the system.
- Build metering systems into all installations and promote performance monitoring.

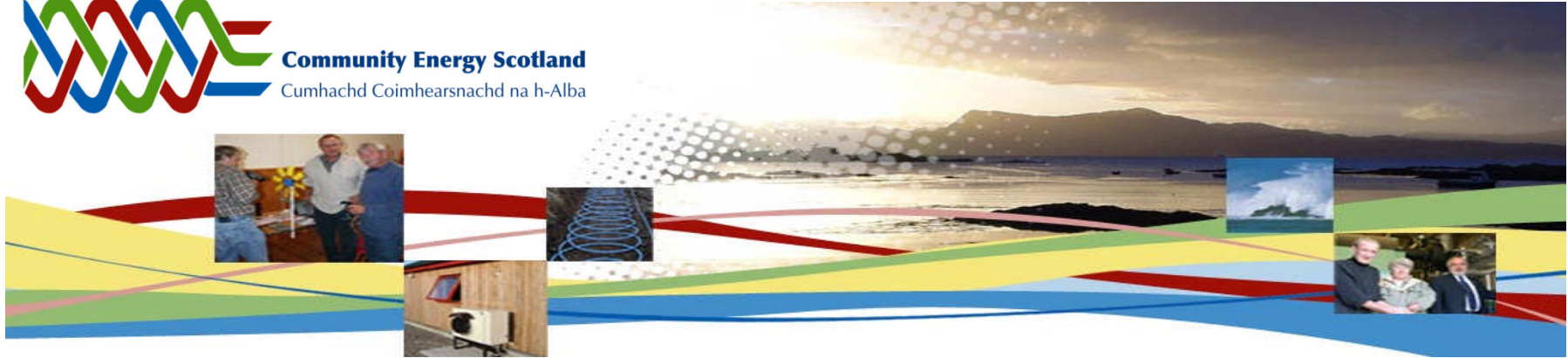
Community micro-renewable projects

What we have learnt...

- Projects are not 'one size fits all'.
- Groups have increased knowledge and expectation of energy requirements and efficiency.
- Value for money is key, not necessarily low cost.
- Technology has evolved and needs to continue its evolution.
- Greater interest in communal heating systems
- Reduction of wind studies in suitable locations.
- Community projects should be considered demonstration projects to a far wider audience



Community Energy Scotland
Cumhachd Coimhearsnachd na h-Alba



Questions Welcomed