The Smart Energy Opportunity Breakout Session

Energy Local and demand shifting

Dr Mary Gillie

Energy Local – a quick recap

Our Vision

Energy Local's aim is to help 1000s of communities to get more value from renewable generation by using it locally.

By sharing local generation we can

- reduce electricity bills
- tackle fuel poverty,
- give local renewables a fair price for their power.
- keep financial benefit local to build stronger, fairer, more resilient communities.

Energy Local

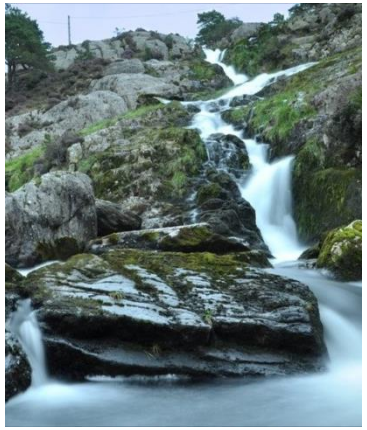
Works with existing organisations as much as possible.

The problem

- If local generation is not used on site when generated, it is sold at~5p/kWh and neighbours buy it back at over twice the price.
- Domestic customers are not rewarded for matching local power or using power at cheaper times of day.
- Reduces income to local economy.
- Renewables are not as viable.

Energy Local – by way of an example

- Ynni Ogwen (Ogwen Energy) raised funds for their community-owned hydro.
- They lose out with the status quo selling at 5-6p/kWh, buying at ~12p/kwh
- With Energy Local, households and the hydro form an Energy Local Club.
- Club members show the amount of power they use when the hydro is generating with a HH meter.
- Members agree the price for the hydro they use when it is generating, e.g. 7p/kWh.
- Households get cheaper power and the hydro receives more money.



Win, win, win

Win for local groups

- Greater income for renewables - potentially 30% uplift.
- Economic multiplier, Reduce bills – 10-30%
- Everyone can be involved, not just share holders.
- Route to engagement – not big brother.

Win for suppliers

- smoothing local curve, reduce the risk of imbalance
- low cost of sale,
- new relationship with customers

Win for DNOs

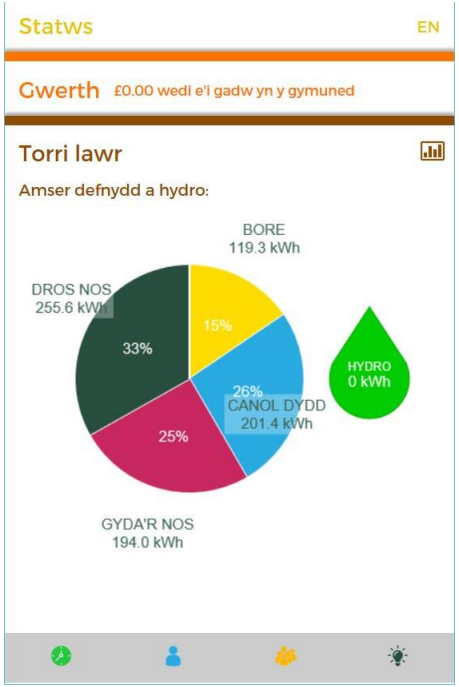
- A framework to encourage local balancing to optimise the network.
- Potential for new Use of system charges

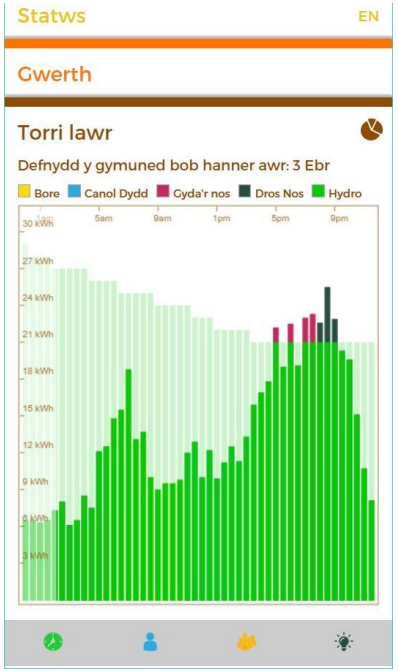
Benefits BOTH consumers and local generation.

Energy Local – end to end trial

- Recruited 100 participants
- Switched to Coop Energy and formed an Energy Local Club.
- Fitted ‘advanced meters’.
- Now have 80+ on the Energy Local tariff matching with the hydro output
- Created an ‘Energy Dashboard’ – cydynni.org.uk
- Formed Energy Local CIC
- Savings are seen in the bills!
- Need to get to a ‘cookie cutter’ process – well a rubbery one.

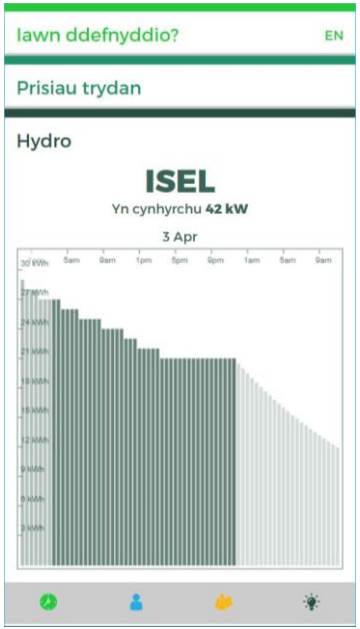
The ‘energy dashboard’ - on a phone/laptop – somewhere useful!

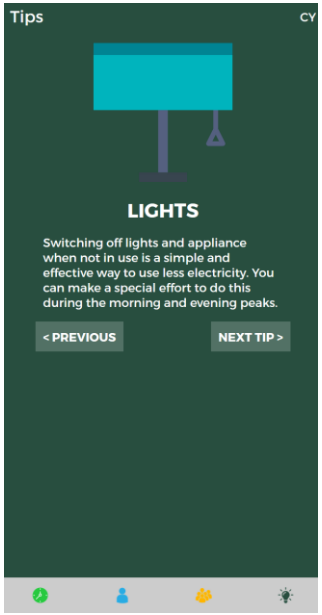




www.cydynni.org.uk

The ‘energy dashboard’





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Why demand shift?

- Balancing the local network reduces congestion - increases capacity to connect generation.
- Smooths the demand curves and reduces inbalance nationally – helps renewables and reduces costs.
- With Energy Local it gives price incentive and retains income locally.
- Need advanced meters to get all the benefit.

How to engage

- Local benefits and community working together are the greatest incentives.
- Comfy place to learn together
- Not ‘big brother’ – household remain in control
- Local projects have much greater impact than a national supplier or similar promoting demand shifting.

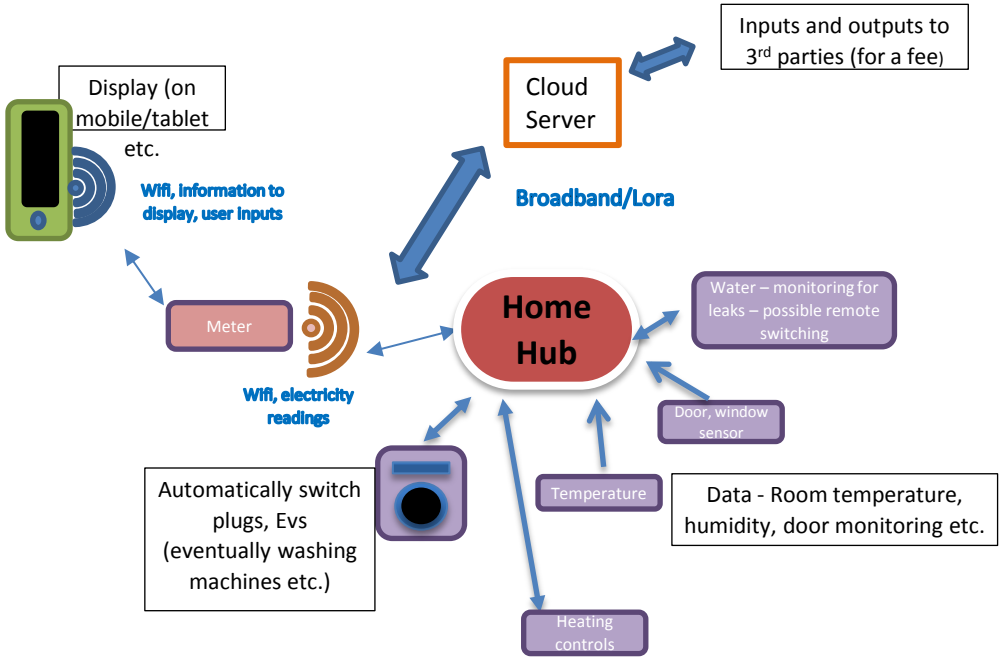
- You have to take time……
- More work needed to finesse information, billing, ‘how you are doing?’

EL club is an exciting new way of working

Community Benefit and motivation

- Motivations are varied but generally in this order
  - community,
  - climate change,
  - intrigued.
  - savings on bills,
- Many people are interested in how electricity is generated and used their own community is a comfy place to learn.
- Vehicle for other work – e.g. energy efficiency, finding those who should be on the priority services register.
- Getting to know each other – inclusion is a big win.
- Empowering people to speak, get new skills
- Economic multiplier, cutting costs with clusters of generators, local jobs as well as purely cutting bills

The Home Hub – next step for demand shifting



Not big brother – householders remain in control of scheduling

Where we want to go

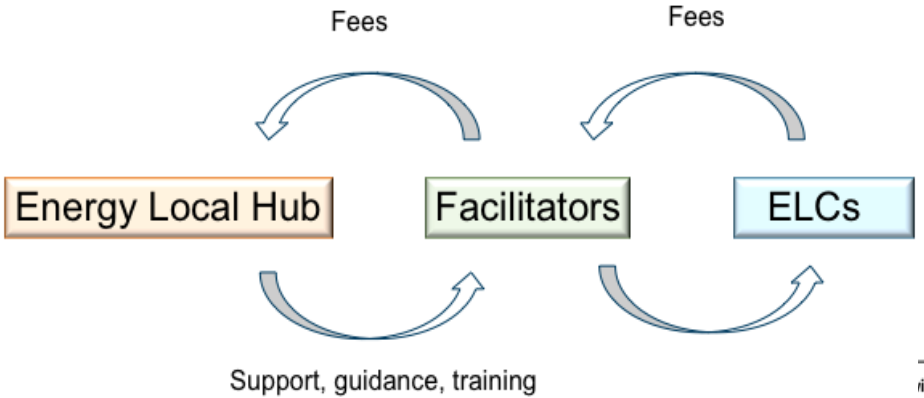
1000s of Energy Local clubs saving money, supporting local economy with viable renewables

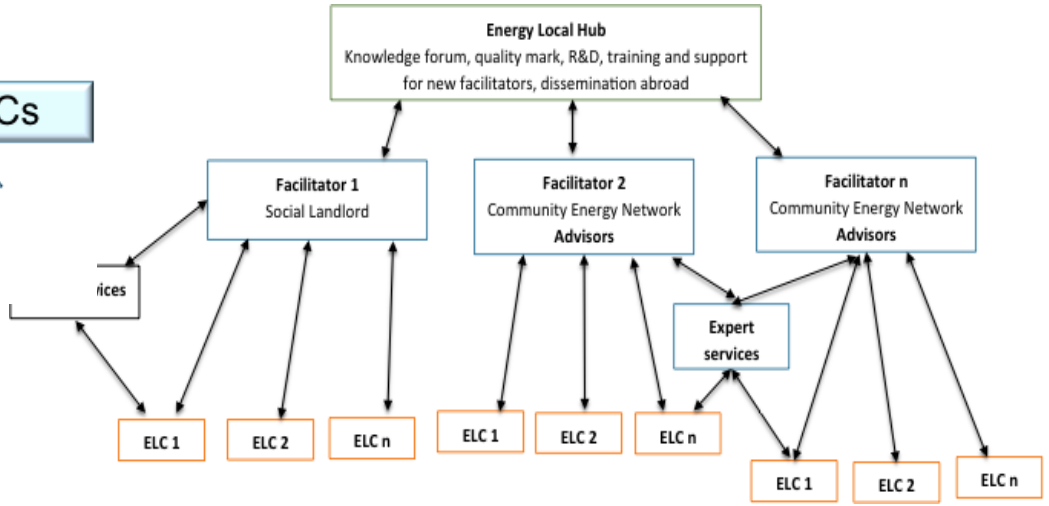
A network of 'facilitators' supporting the clubs in their region.
Knowledge sharing and tool kit to make the process easy

Network operators working with Energy Local Clubs to optimise the network and develop a smart grid

Supplier developing new tariffs and services to harness flexibility and demand side management for a low carbon energy system

Roll out framework - Roles and Responsibilities





For more information

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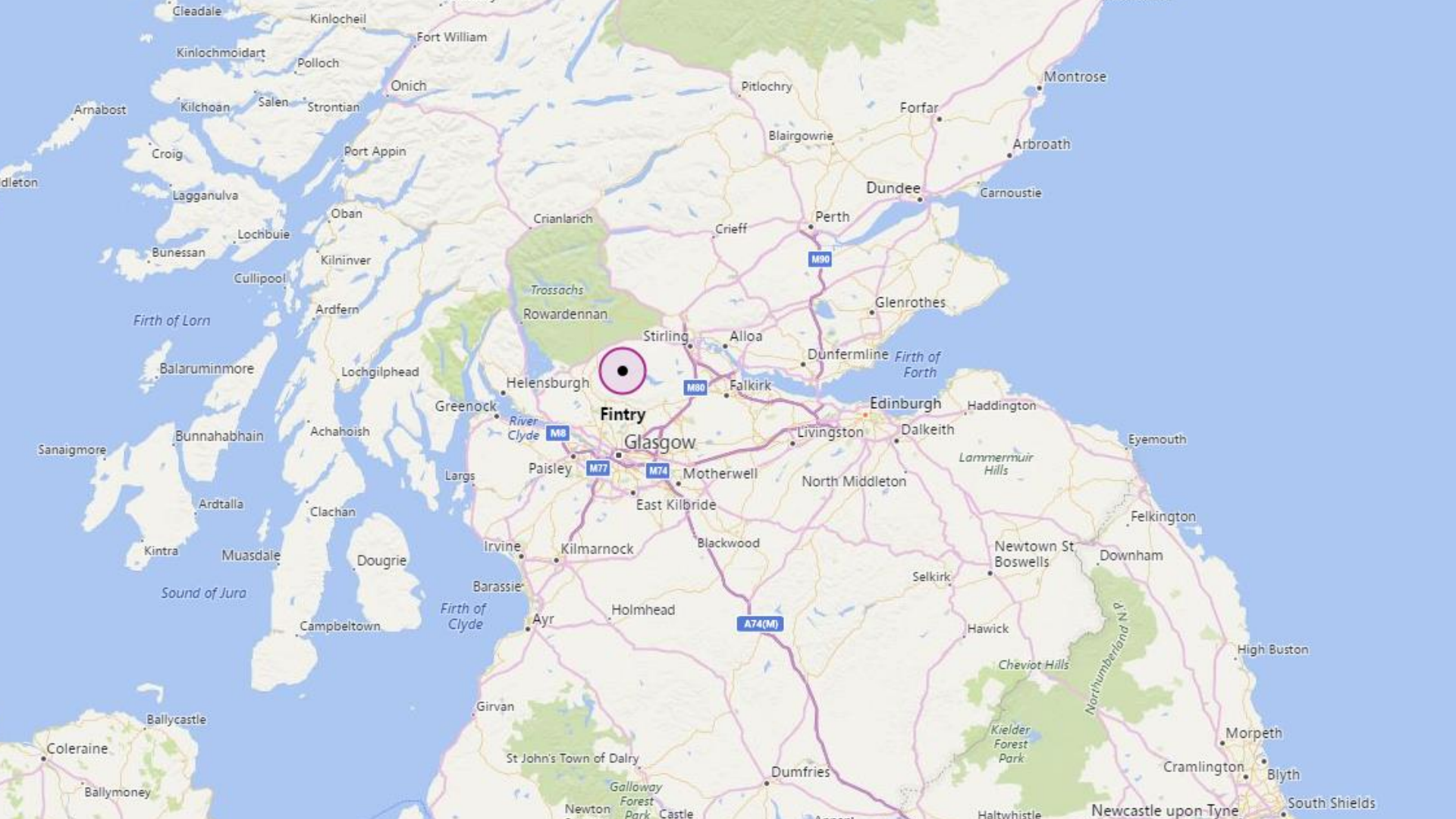
24th June – 9th July 2017

SMART Fintry

Gordon Cowtan
Fintry Development Trust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Oban
Lochbuie
Bunessan
Kilninver
Cullipool
Ardfern
Firth of Lorn
Balaruminmore
Lochgilphead
Bunnahabhain
Achahoish
Sanaigmore
Ardtalla
Clachan
Kintra
Muasdale
Dougrie
Sound of Jura
Campbeltown
Pitlochry
Montrose
Forfar
Blairgowrie
Arbroath
Dundee
Carnoustie
Perth
Crieff
Crianlarich
Trossachs
Rowardennan
Stirling
Alloa
Dunfermline
Firth of Forth
Glenrothes
M90
Helensburgh
M80
Falkirk
Greenock
River Clyde
M8
Fintry
Glasgow
Edinburgh
Haddington
Livingston
Dalkeith
Eyemouth
Lammermuir Hills
Paisley
M77
M74
Motherwell
North Middleton
Largs
East Kilbride
Felkington
Irvine
Kilmarnock
Blackwood
Newtown St Boswells
Downham
Selkirk
Barassie
Firth of Clyde
Ayr
Holmhead
A74(M)
Hawick
High Buston
Cheviot Hills
Northumberland N.P.
Girvan
Ballycastle
Coleraine
Ballymoney
Kielder Forest Park
Morpeth
St John's Town of Dalry
Dumfries
Cramlington
Blyth
Galloway Forest Park
Newton Castle
Newcastle upon Tyne
South Shields

Fintry Development Trust

- FDT Background
  - Been in existence for over 10 years
  - Shared ownership at Earlsburn windfarm
  - Variety of projects
  - Long held aspiration to supply electricity

SMART Fintry

- Match local electricity supply with demand to create a local energy economy
- Reduce electricity costs to end users by addressing UK market charges and mitigating peak demand
- Reduce the local carbon impact of the Fintry community
- Produce a blueprint and policy guidance for other similar community projects in the UK

SMART Fintry Structure

- Partners

- Two-year Local Energy Challenge Fund project

Progress to Date

Year 1

- Initial meeting with Ofgem
- SMART Fintry Local Tariff has been launched
- Local generators have now joined the project and are supplying Fintry with 100% renewable electricity
- Each end user has a smart meter installed
- Network communications creating a virtual link between producers and consumers enabling the transfer of generation and demand data

Plans – Year 2

- Over 100 homes have now signed up
- Replicability very important
- Four innovation areas -
  - Community Capacity
  - Active Energy Customers
  - Regulatory Changes
  - Demand Side Response
- Create a report outlining policy guidance for future UK projects

SMART FINTRY

GET SWITCHED ON

Home | Energy Dashboard | Fintry Residents | About Smart Fintry | News | Contact

Dashboard

Solar
Installed: 50kW
Operative: 18.39kWh
Status: OK

Wind
Installed: 95kW
Operative: 4.8kWh
Status: OK

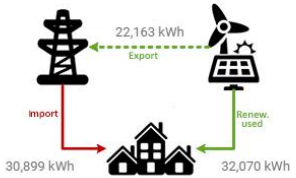
AD Plant
Installed: 950kW
Operative: 950kWh
Status: OK

Hydro
Installed: 0kW
Operative: 0kWh
Status: PLANNED

Current Availability

Availability Clock

RE Usage & Stats



Weather Forecast

15	67.9°F	Clouds 100%	Wind 6.04mph
16	68.2°F	Clouds 100%	Wind 7.09mph
17	67.6°F	Clouds 100%	Wind 7.67mph
18	66.4°F	Clouds 100%	Wind 7.85mph

Generation and Demand

Most promising surplus: 14:00 (-4KWh)
Most critical shortfall: 22:00 (-137KWh)

For more information

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Q&A

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