Community Connects

Community and local energy workshops

electricity north west

Bringing energy to your door

A ‘whole place approach’ to low carbon communities …an introduction

Stay connected...

www.enwl.co.uk

We will cover….

- Motivations
- Benefits of a whole place approach
- Visions - what does a successful whole place approach look like?
- Special ingredients
- Reality checks
- Resources
- Examples
- Upcoming events

Motivations

Photos: ©R Pringle 2014

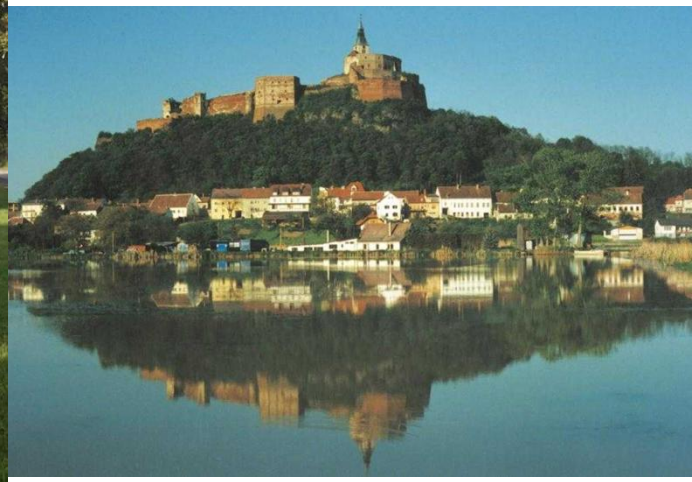

Photo: Peter Vadasz

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Benefits

Photo: Ashton Hayes Going Carbon neutral

Photos: www.Isleofeigg.org

Photos: ©R Pringle 2014

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Güssing

Güssing produces from



Heat, electricity, synthetic natural gas, fuels, air condition



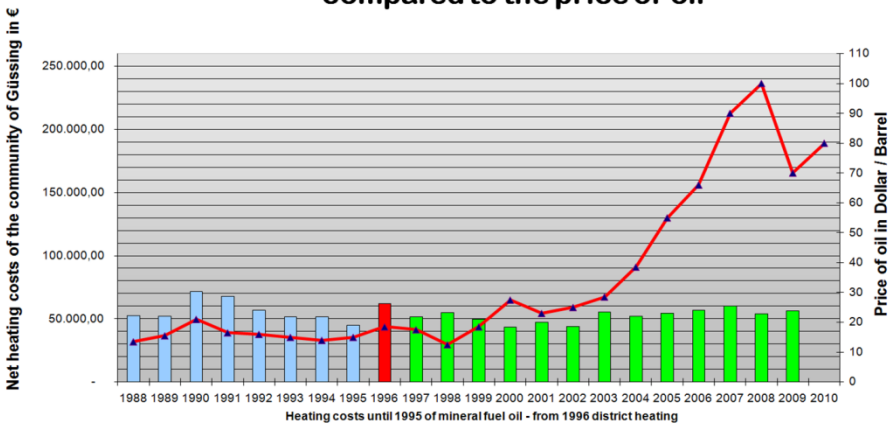

The added value

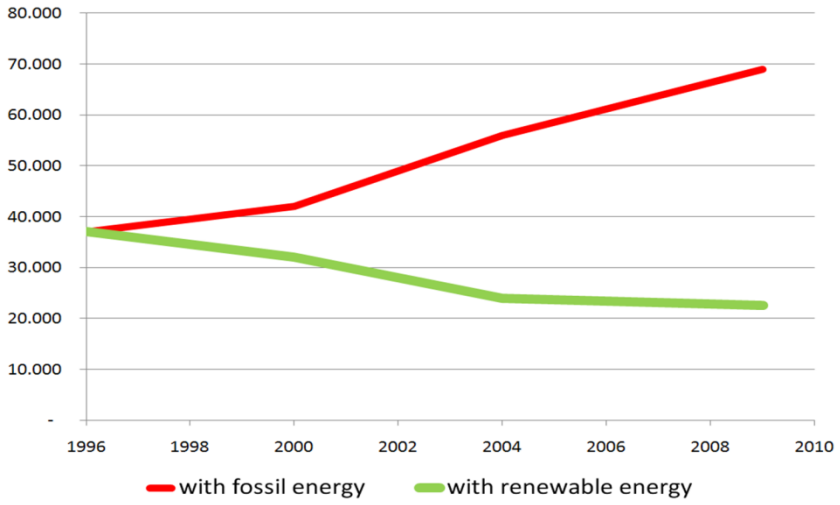
for the town of Güssing

- More than 50 new companies
- More than 1,100 new jobs netting more than
- € 9M a year
- Total sales volume of energy € 13 M a year
- Total wood consumption 44,000 tons a year

for the district of Güssing

- 45% self sufficiency netting *€ 18 M EURO*
- Potential in case of 100% self sufficiency € *37 M*





Images: Peter Vadasz

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Visions – what does a successful whole place approach look like?

Image: Lynn Rae Lowe

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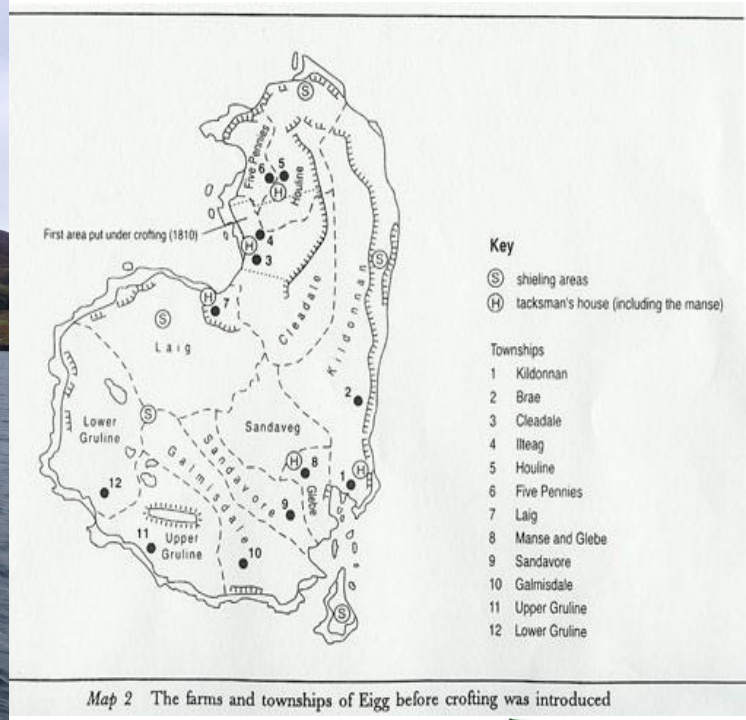
Examples: Isle of Eigg



Map 2 The farms and townships of Eigg before crofting was introduced

https://www.youtube.com/watch?v=HMCgSf-QSKo

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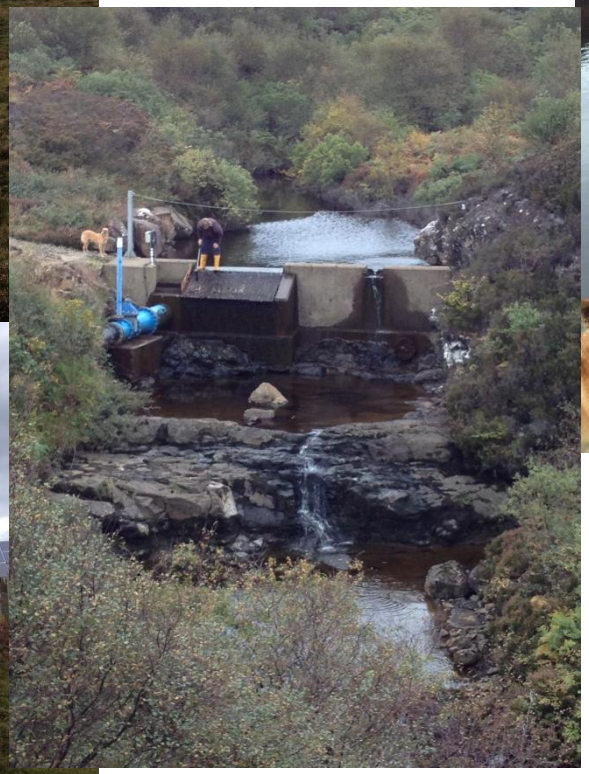

Photos: ©R Pringle 2014

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Storage & demand management

Photo: ©R Pringle 2014

Photo: Daniella Zalcman

Photo: isleofeigg.org

http://www.isleofeigg.org/eigg-electric/
https://www.bbc.co.uk/programmes/b05v7tqq

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A Whole Place Energy System for Burneside

A Vision for Burneside

18 JUNE 2015

Research carried out by

Quantum

CAfS Cumbria Action for Sustainability

Ellergreen Hydro

Luneside Consulting

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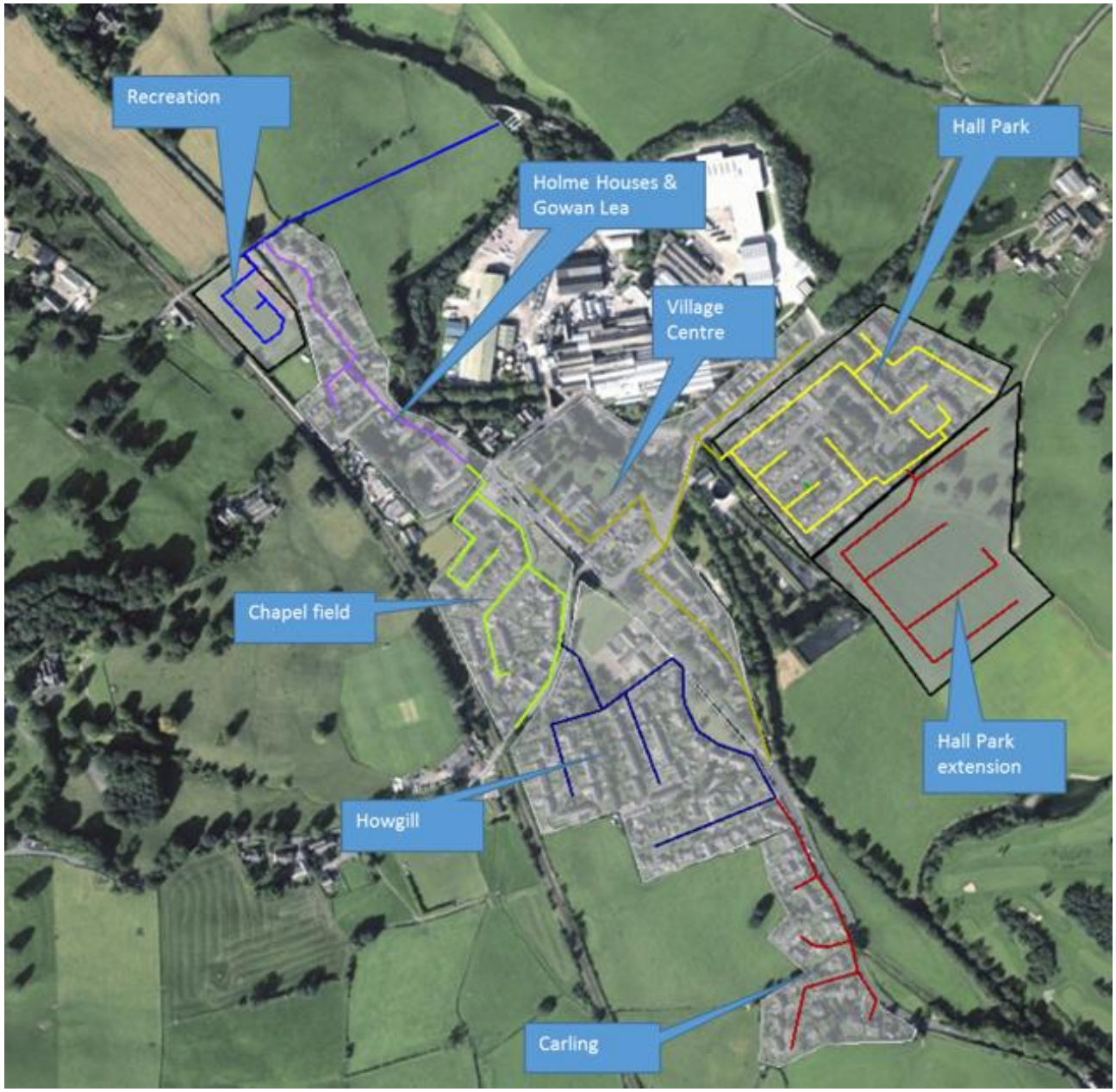
The village of Burneside



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Inspiration…

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The Concept

- Community owned and managed local energy network, providing renewable heat and power to homes in the village
- Retaining spending within village economy
- Leading demonstration of the capacity of a village to take charge of its own low carbon future

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The Proposed Project

- A **private wire** electricity network linking all the new homes, and the renewable electricity supplies, and extending across the village
- **Solar PV** on new homes and ground mounted
- **Electric vehicle** charging points
- Two **district heat networks** supplying low temperature heat to the new homes
- Electricity and heat storage
- Smart electricity and heat **metering**

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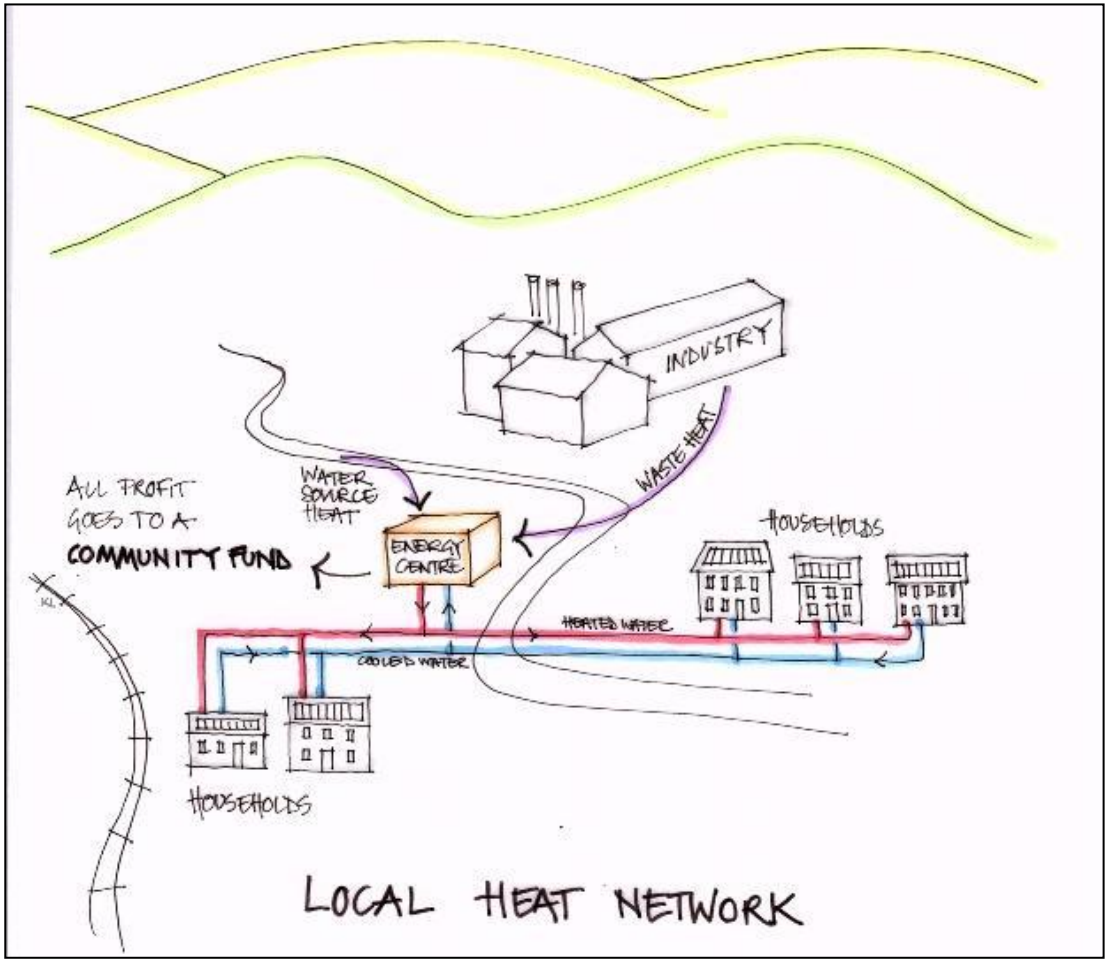
Guiding Principles

- Retention and re-circulation of money within the local economy
- Local jobs
- Contribution to the vision of ‘world class’ village
- Fairness
- Environmental Responsibility
- Local ownership
- Local accountability

Initial Project – District Heating



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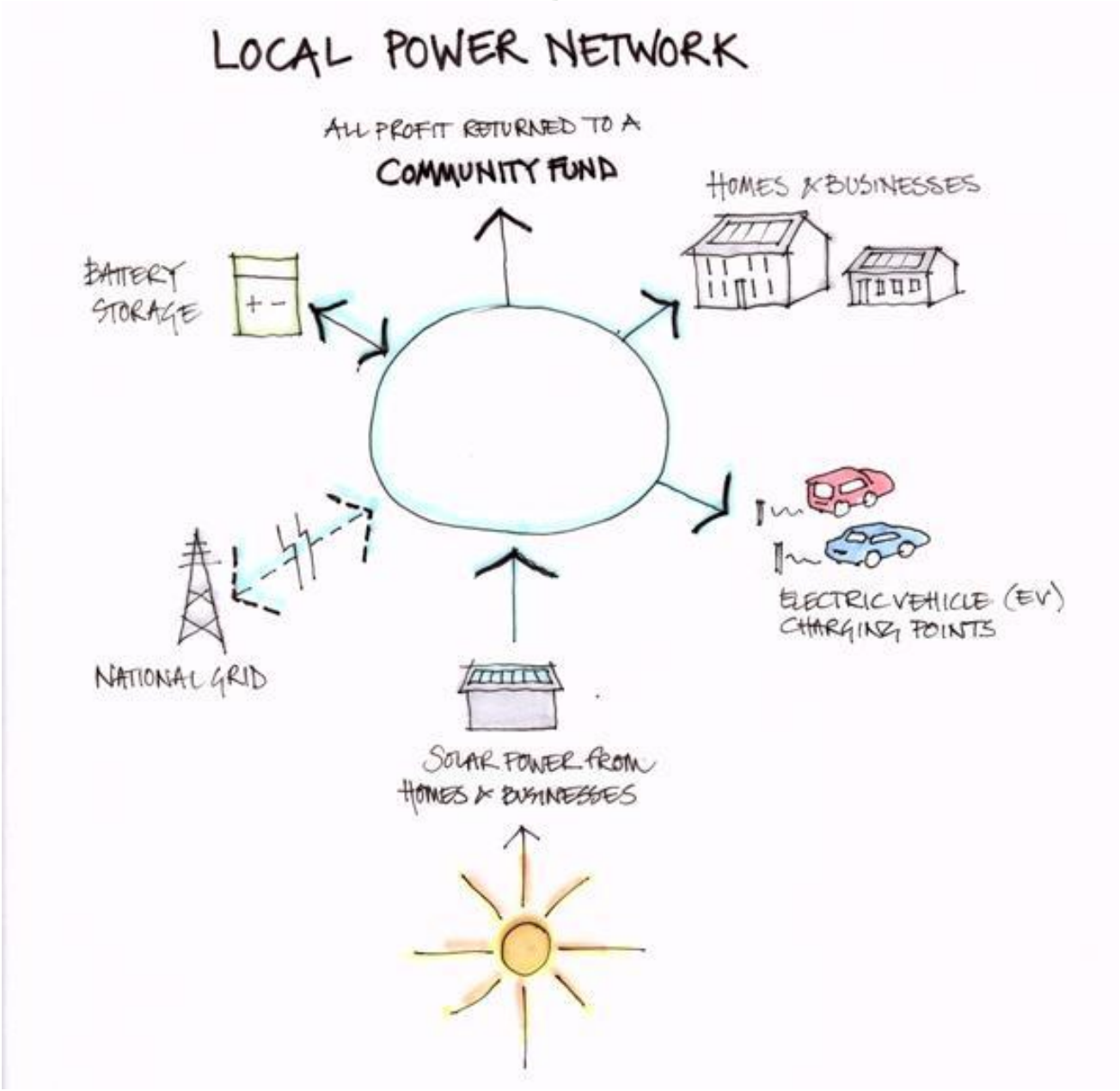
Local Electricity



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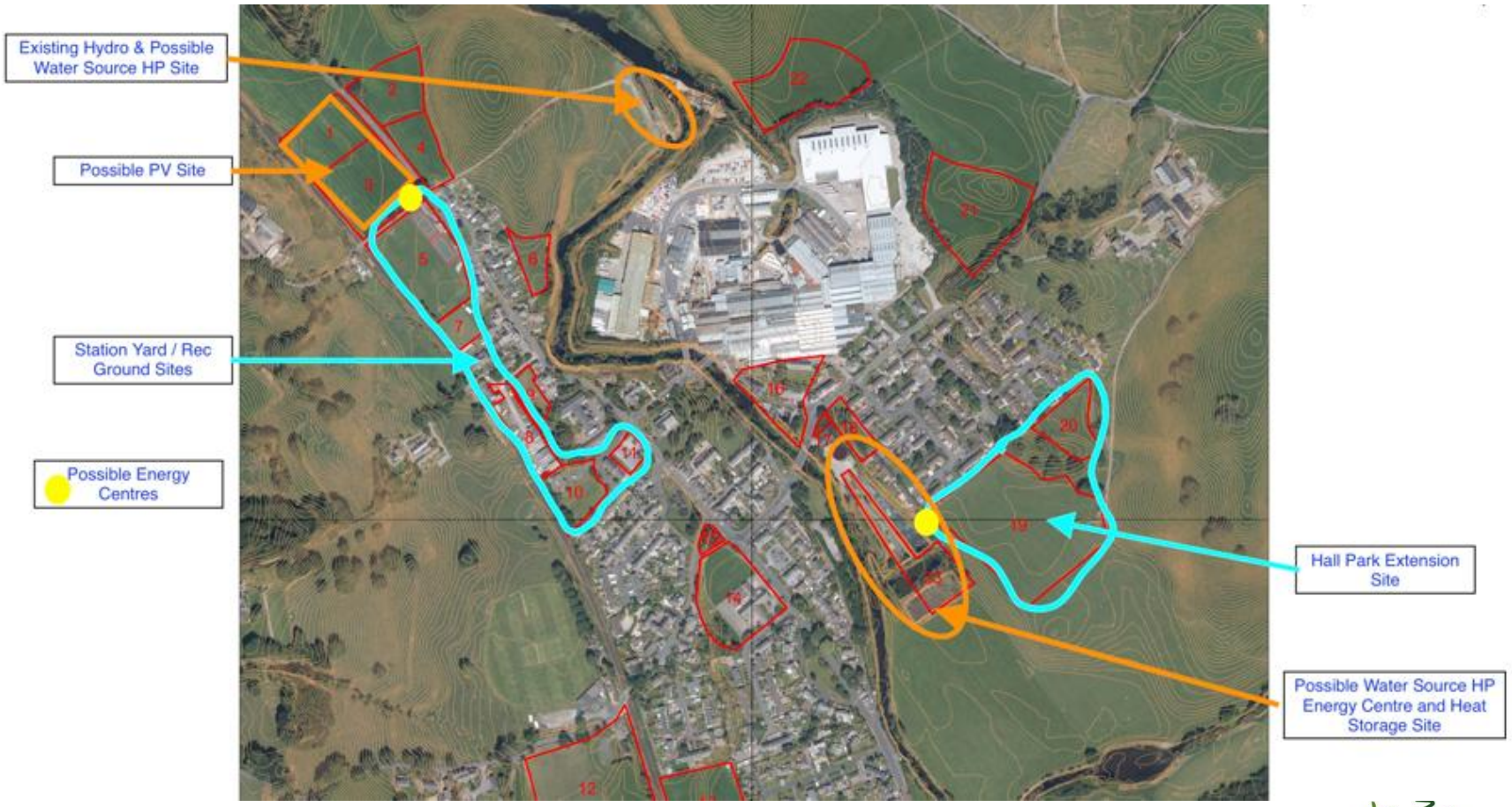

Burneside opportunities

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Burneside Community Energy – a local supplier

- Maintaining supply to households
- Managing and maintaining the network
- Billing customers
- Customer service, queries, complaints
- Meeting the national Codes of Practice
- Reporting on performance to members and the local community

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What it means…as a customer

- Home connected to the district heat network (no gas) and electricity private wire
- Your own electric vehicle charging point
- Smart metering to allow you to make the best use of locally-generated energy
- Pay your energy bills to BCE
- Can opt-out and buy energy from national suppliers (but connection charges)
- Local customer service and maintenance staff
- Covered by energy industry Code of Practice

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What it means…as a resident

- Community benefit fund of around £250,000 over 20 years
- Electric vehicle charging points
- Future opportunity to become connected to the electricity and heat networks
- Job opportunities in the new business and in construction, maintenance and support
- National recognition

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Financing the Project

- Total cost around £4 million
- Grants: network & storage costs approx £2 million
- Community Share Offer: likely £2 million @ 4%

- Community benefit fund: £250,000
- Customer benefits: £130,000

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Alston Moor Greenprint

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Alston Moor Community Energy

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PRODUCTION


Let's GROW ALSTON MOOR
Do you care about local food production or community growing?
Are you interested in future food security and quality?
We'd love to hear from you!
Are you…
Local growers with knowledge and passion?
Residents or businesses with land, greenhouses, poly tunnels or equipment to share?
Can you help to create a strong Local Food Growing Network?
Can you share your skills and time with an aim to developing therapeutic and enterprising grow projects throughout Alston Moor?
If you want to know more please contact us via the Alston Moor Greenprint project - roe@cafs.org.uk
Alston Moor Greenprint
Happening in the North Pennines
Esmée Fairbairn Foundation
CAFS

TRANSPORT

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BUILDINGS / HOUSING

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EXTREME WEATHER RESILIENCE

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CONVERGENCE

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Calculating Energy Demand

- No of homes…but also…what are the other main users of energy in the community (non-domestic) and when do they use heat / power?
- EPC for homes – A useful guide to average energy use. Indicative figures available according to build type and age.
- Average consumption: Power and Heat: annual, monthly, daily, half hourly - vital to understand peaks (e.g. Winter, Friday 6pm)
- Economics of storage
- Current main energy supply:

  Mains gas, solid fuel, electric, other

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Alston Moor energy stats

- 1,156 homes on the moor (2011 census) - around half are off-gas (so renewable heat is cost competitive)
- Generally low levels of energy efficiency
- A fifth of households 'fuel poor'
- Significant scope for reducing carbon and bills
- No data available on commercial / non-domestic

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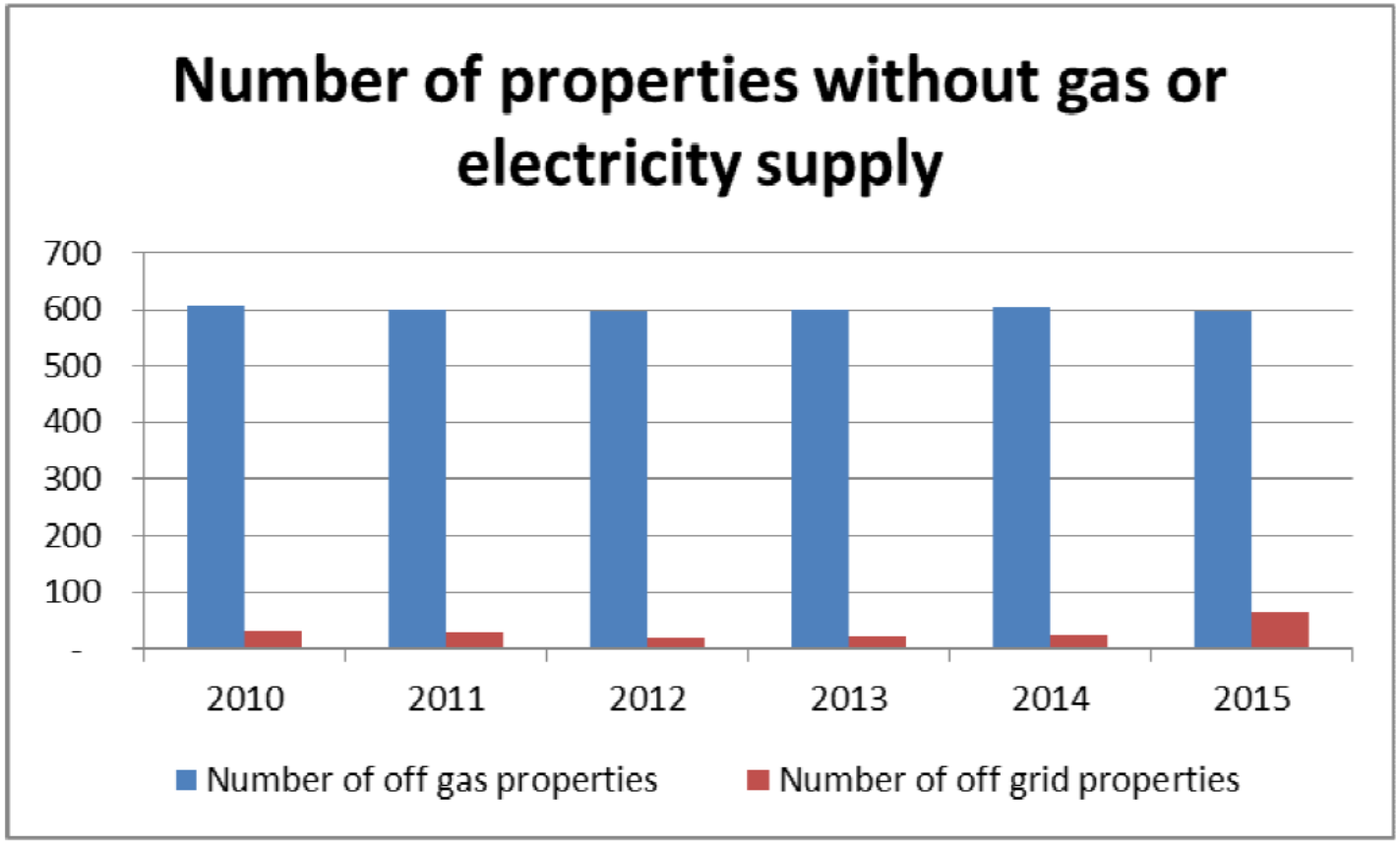
Alston Moor



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Alston Moor: Possible renewable heat deployment

Source	No. potential installations	Maximum capacity (kW)	Maximum output (MWh)	Proportion of current consumption
Solar thermal	102	200	70	0.6%
Biomass	250	2,500	3,100	16.4%
GSHP	10	60	120	0.7%
ASHP	25	125	250	1.3%
Total	**387**	**2,885**	**3,540**	**19.0%**

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Alston Moor: Possible renewable electricity deployment

Source	No. potential installations	Maximum capacity (kW)	Maximum output (MWh)	Proportion of current consumption
Hydro	10	50	75	1.5%
Wind	50	250	657	13%
PV	380	1,150	920	18%
Total	**440**	**1,450**	**1,652**	**32.5%**

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Reality check

- Time
- Bureaucracy
- Personalities
- Politics
- Energy sources
- Infrastructure
- Dead ends/curve balls
- …….

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Special Ingredients

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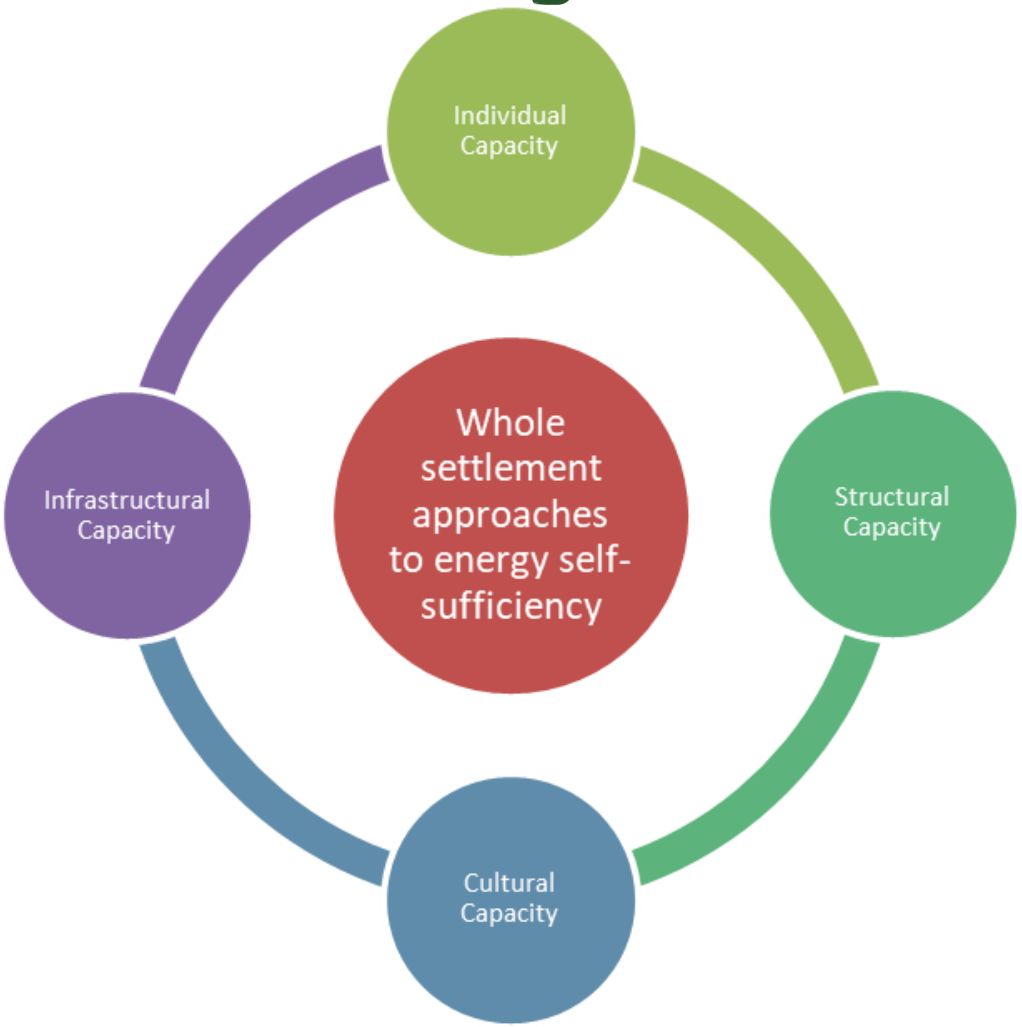
Special ingredients



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Special Ingredients

Visions in all cases

Personal capacity

Dynamic individual leaders in 4 European & 3 UK cases

Structural capacity

Governance structures different
Delivery structures similar

Infrastructural capacity

Different renewable resources
Community ownership of electricity and heat generating systems & district heat networks

Cultural capacity

Independence of spirit
Rationales different

Outcome

Nowhere has achieved complete energy independence in heat and power. Transport an issue
Significant local benefits

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Resources/Upcoming Events

There are many examples of carbon footprint/energy consumption calculators:

http://www.goingcarbonneutral.co.uk/community-carbon-calculator-un/

Güssing - https://www.youtube.com/watch?v=H1WsbQQNsV0

Free events/support

https://cumbriagreenbuild.org.uk/events

- Electric vehicle event 5-7pm 3rd October, County Council offices, Kendal
- An evening with……
- Support for low carbon energy community projects in South Lakeland

If interested, please contact Rhona Pringle,

Tel: 01768 210276; Email: Rhona@cafs.org.uk

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Thank you!