

Fintry Development Trust

Community energy projects

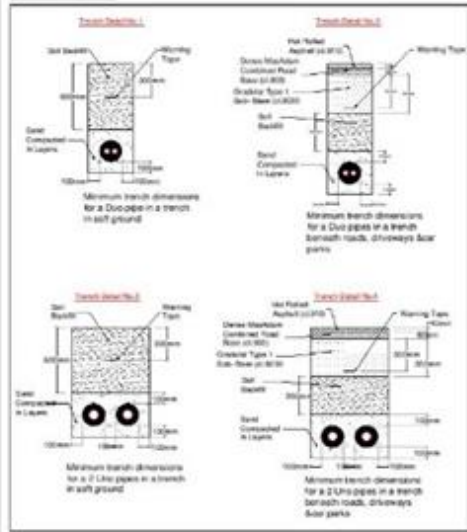
Fintry Development Trust

- ▶ In 2007, Fintry Development Trust became the first community in the UK to enter a joint venture with a windfarm developer (Falck Renewables). FDT owns 1/15th (2.5MW) of Earlsburn Windfarm.
- ▶ FDT set up this project and continues to manage the resulting income on behalf of the community. As a consequence, each home in Fintry can access a £500 grant to use for energy efficiency measures.
- ▶ The aim of Fintry Development Trust is to enhance the sustainability of this rural community through climate change mitigation and the alleviation of fuel poverty.
- ▶ FDT provides an ongoing energy advice service to local homes and businesses - energy efficiency, renewables, fuel poverty

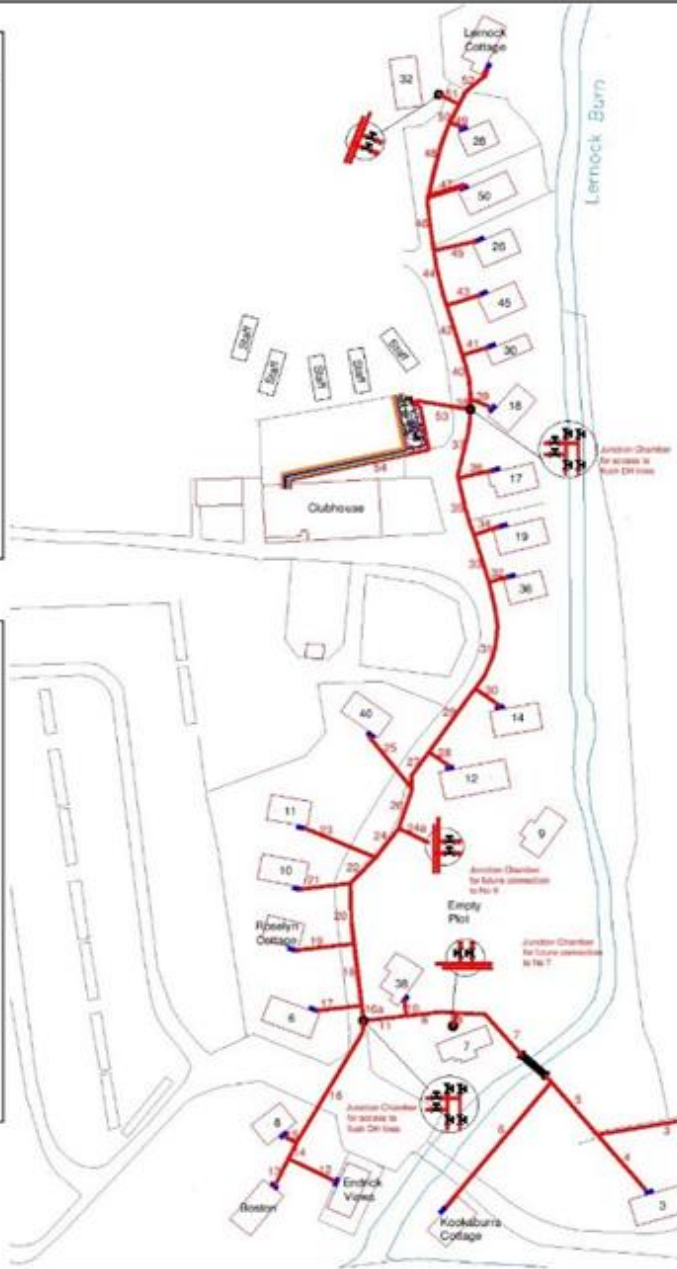
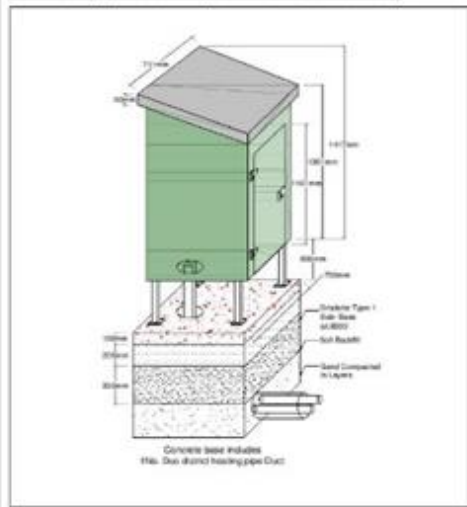




Trench Detail



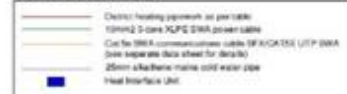
HIU Housing Unit Details (23 Units To Be Installed)



District Pipe Specification

Pipe Number	Pipe Diameter mm	Pipe Length m	Trench Detail Number
1	32 x 2.9 (DN25)	50	No. 1
2	25 x 2.3 (DN20)	4	No. 1
3	40 x 3.7 (DN32)	33	No. 1
4	25 x 2.3 (DN20)	21	No. 1
5	40 x 3.7 (DN32)	20	No. 1
6	25 x 2.3 (DN20)	45	No. 1
7	50 x 4.6 (DN40)	40	No. 1
8	25 x 2.3 (DN20)	5	No. 1
9	50 x 4.6 (DN40)	5	No. 1
10	25 x 2.3 (DN20)	6	No. 1
11	63 x 5.7 (DN50)	75	No. 1
12	25 x 2.3 (DN20)	14	No. 1
13	25 x 2.3 (DN20)	5	No. 1
14	32 x 2.9 (DN25)	5	No. 1
15	25 x 2.3 (DN20)	5	No. 1
16	40 x 3.7 (DN32)	56	No. 2
16a	50 x 4.6 (DN40)	4	No. 2
17	25 x 2.3 (DN20)	17	No. 1 & 2
18	63 x 5.7 (DN50)	15	No. 2
19	25 x 2.3 (DN20)	15	No. 1 & 2
20	63 x 5.7 (DN50)	15	No. 2
21	50 x 4.6 (DN40)	18	No. 1 & 2
22	63 x 5.7 (DN50)	9	No. 1
23	25 x 2.3 (DN20)	20	No. 1
24	63 x 5.7 (DN50)	9	No. 1 & 2
24a	32 x 2.9 (DN25)	40	No. 2
25	25 x 2.3 (DN20)	19	No. 1 & 2
26	63 x 5.7 (DN50)	10	No. 1 & 2
27	63 x 5.7 (DN50)	10	No. 2
28	25 x 2.3 (DN20)	5	No. 1
29	75 x 6.8 (DN63)	38	No. 4
30	25 x 2.3 (DN20)	9	No. 1
31	75 x 6.8 (DN63)	54	No. 4
32	25 x 2.3 (DN20)	7	No. 1
33	75 x 6.8 (DN63)	34	No. 4
34	25 x 2.3 (DN20)	6	No. 1
35	75 x 6.8 (DN63)	30	No. 4
36	25 x 2.3 (DN20)	10	No. 1
37	75 x 6.8 (DN63)	34	No. 4
38	50 x 4.6 (DN40)	3	No. 2
39	25 x 2.3 (DN20)	14	No. 1
40	50 x 4.6 (DN40)	11	No. 2
41	25 x 2.3 (DN20)	6	No. 1
42	40 x 3.7 (DN32)	13	No. 2
43	25 x 2.3 (DN20)	10	No. 1
44	40 x 3.7 (DN32)	15	No. 2
45	25 x 2.3 (DN20)	12	No. 1
46	40 x 3.7 (DN32)	17	No. 2
47	25 x 2.3 (DN20)	10	No. 1
48	32 x 2.9 (DN25)	15	No. 2
49	25 x 2.3 (DN20)	5	No. 1
50	32 x 2.9 (DN25)	3	No. 2
51	25 x 2.3 (DN20)	10	No. 2
52	25 x 2.3 (DN20)	15	No. 2
53	50 x 4.6 (DN40)	37	No. 4
Outhouse	50 x 4.6 (DN40)	47	No. 2

District Piping Key



Notes on the Installation of Pre-Insulated Pipework

- The ductwork is to be connected to the internal primary heat network by pre-insulated underground pipe by Rammed Backfill, Cables or equal and approved.
- Use of Duct pipes are to be installed as shown.
- Trenches are to be prepared and back filled in accordance with the pipe manufacturer's installation instructions.
- Trenches are to be formed as detailed in the trench drawing on sheet 2 of this drawing.
- Warning tape is to be installed 300mm beneath the surface in each dig and 400mm beneath the surface in roads.
- Where pipes cross existing underground services the minimum clearance shown in the table are to be achieved.
- The absolute minimum bend radius to the centreline of the pipe is given as table for each size of pipe.
- Each pipe is to be installed in a single length without jointing.
- Pre-insulated 90 degree bends will be required for the pipe bridge.
- Green pipe is to be taken to ensure that dirt and debris does not enter any pipe during installation.
- The external pipework is to be flushed thoroughly in accordance with the instructions in the specification.
- Once the external pipework has been connected to the steel internal pipework to form the primary pipe network, it is to be flushed and pressure tested from where the pipe work terminates in the Domestic Container in accordance with the specification.
- Note that to achieve the minimum bend radii, the 40mm Diameter Warning line pipes entering the Domestic container, and the 50mm Duct pipe entering the outhouse will require trench depths greater than those indicated above.

Notes on the Installation of Pre-Insulated Pipework

Utility or Other Service	Is parallel with Duct pipe for x 5m or over	Is parallel with Duct pipe for x 5m
220V or 400V mains electricity cables	0.3m	0.3m
DIT cables or network cables	0.3m	0.3m
Gas & Water services	0.2m	0.4m

Drinking water services adjacent to heating pipes are to be protected by the service provider to prevent them from freezing above the temperature specified by British Water.

REV / DESCRIPTION	BY	CHKD	DATE
PROJECT TITLE			
Balgair Castle Holiday Park			
DRAWING TITLE			
District Heating Network Layout			
DRAWING NUMBER	REV	SIZE	SCALE
		A3	1:XX
DRAWN BY	DATE	CHECKED BY	DATE
OF	11.02.15	MS	11.02.15

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Summary

- ▶ The project provides affordable low carbon heat to 26 residential park homes within the community.
- ▶ The project is the first of its kind, being the first community renewable district heating project for park homes in the UK.
- ▶ The scheme offers residents at Balgair Castle Caravan Park a 20% reduction in heating costs comparative to their previous expenditure on individual LPG combination boilers.
- ▶ Furthermore, residents will never have to get their boilers serviced again or arrange for gas deliveries.
- ▶ Reduces carbon emissions by 150 tonnes
- ▶ Alleviates fuel poverty
- ▶ Enhances environmental, economic and social sustainability of a rural community in Scotland
- ▶ Easily replicated across the UK

SMART Fintry



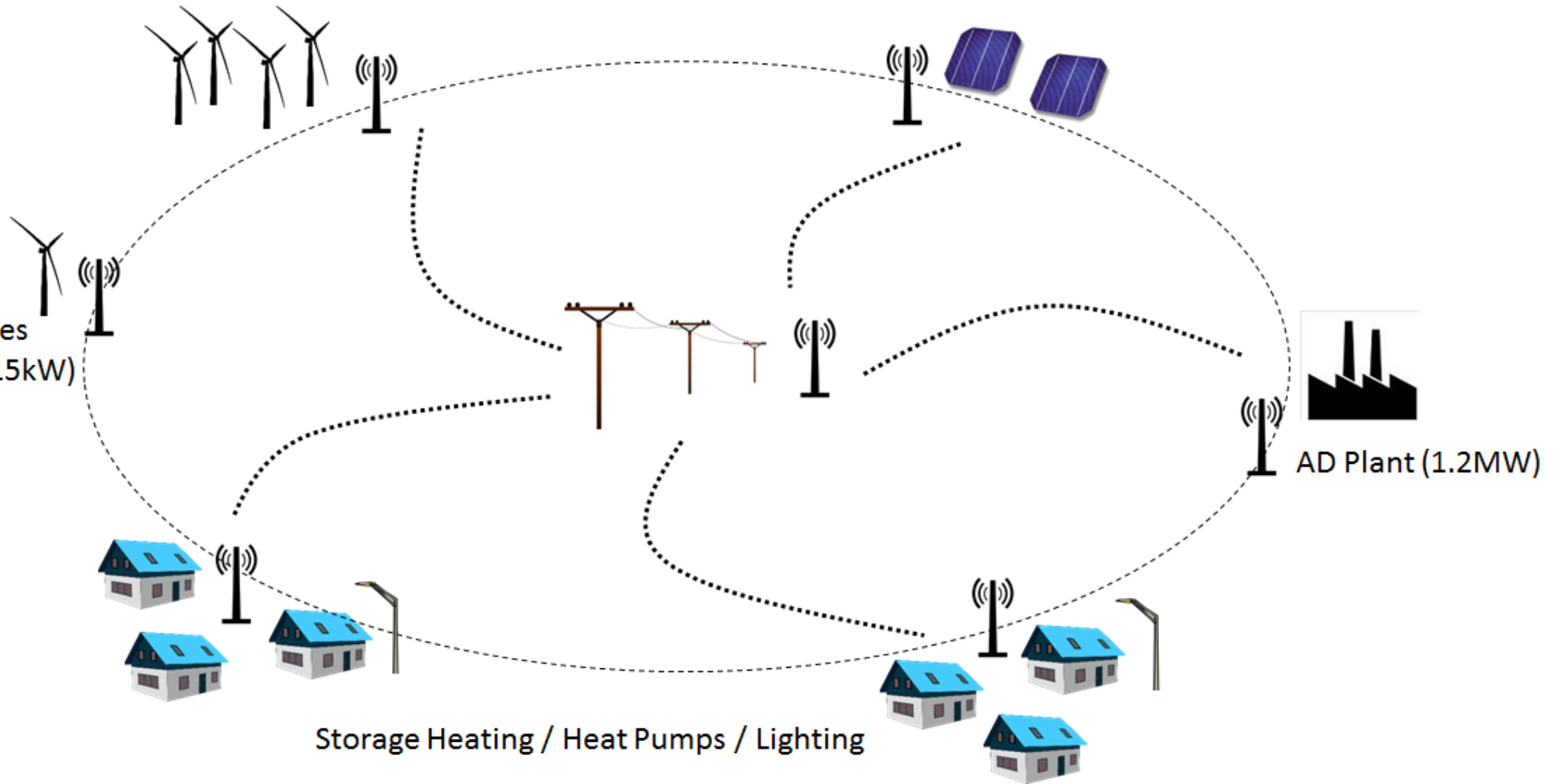
Earlsburn Wind Farm (2.5MW)

PV Array (50kW)

Wind turbines
(90kW + 2*15kW)

AD Plant (1.2MW)

Storage Heating / Heat Pumps / Lighting



Partners - Roles and Responsibilities



- ▶ Fintry Development Trust

Community Organisation



- ▶ Veitch Cooper Limited

Innovation Intermediaries



- ▶ Good Energy

Energy Supply



- ▶ Energy Assets

Metering and Control



- ▶ Heriot Watt University

Forecasting and load profiling

The aim of the SMART Fintry project is to pilot a replicable and innovative model that links local, sustainable generation with consumption and which can be deployed across the UK

To use locally generated renewable electricity in the community to reduce energy costs and alleviate fuel poverty.

To address and overcome contractual barriers within the electricity market that act to prevent this direct linkage of production and consumption.

To investigate the impact of communities moving from price takers to price setters on energy bills and assess how this changes the role of the energy supplier.

To provide improve comfort and reduce fuel bills and emissions within Fintry

To retain and enhance local value and economic resilience.

To work with the Distribution Network Operator (DNO) to provide transparent, real time information, relating to network operation which informs, and where possible helps shape, the connections design process

To develop and expand on the work of Fintry Community Energy in becoming a community energy supplier, a model used in several other European countries such as Germany and Denmark.

To develop a framework to help shape future policy relating to distributed energy use

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F I N T R Y

Progress to date

- ▶ SMART Fintry Local Tariff launched with over 100 households now sign up
- ▶ Local generators have now joined the project and are supplying Fintry with 100% renewable electricity
- ▶ Each end user has a special meter installed which records consumption data
- ▶ Network communications deployed to create a virtual link between producers and consumers enabling the transfer of generation and demand data
- ▶ Online energy dashboard has been created which shows users matching of demand and supply
- ▶ Four innovation areas – Community Capacity, Active Energy Customers, Regulatory Impact & Demand Side Response

Next

- ▶ Overcome market barriers and identify new revenue streams
- ▶ Create a report outlining policy guidance for future UK projects

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