

	will act as FLC with NIHE and ARC HLC. The Grant Offer Letter 1 st period ends 31st March 2019.	
2.2	<p>Work Package 2 - Evaluate Existing Best Practice (Austurbru ses)</p> <p>Jón presented a draft template designed to collect fuel data from 2007 based on ratio of fuels by heated area in each region per year. Discussions concerning the level of detail to be captured took place with Robert suggesting a rural and urban split with solutions which must suit all regions, together with rural solutions for project outputs. Partners agreed that the project should establish what is happening in rural regions in nine countries. Jenny suggested that all partners need to establish what good practice exists in rural areas and drill down to extract data from outcomes. For the Fuel Mix assessment data capture, partners agreed to collect data from the following regions:</p> <p>Austurbru ses - Iceland, Greenland and Faroe Islands LUKE - Finland, Norway, Sweden PURE - Scotland and Norway (suggested) NIHE - Northern Ireland Clár I.C.H –Republic of Ireland</p> <p>Jón gave a presentation on the viability of a district heating system for a rural area in Fjaróabyggo using waste heat from Alcoa Fjardaaál. Robert asked Jón what % of heating oil is being used by various regions.</p> <p>Robert explained the energy market in NI and of its reliance on EU energy suppliers. There is a single energy market in Ireland with the same energy operator covering two jurisdictions, the Republic of Ireland and NI, provided by Sony and EirGrid Plc who supply 2.5 million customers from a combination of coal, peat, natural gas, wind and hydropower. Both companies agreed to have an All-Ireland Single Energy Market however if this arrangement ceases, energy could become more expensive.</p> <p>Robert discussed his recent talks with the NI energy regulator. The binding agreement across 3 jurisdictions could be affected following Brexit. Contingency plans have not been disclosed but options are that NI has enough power supply if the North and South and Scotland agreement is broken.</p>	All
2.3	<p>Work Package 3 - Demonstration Pilots (Karelia & NIHE)</p> <p>Ville provided an update on Karelia’s demonstration pilot and the tender process which is underway. The pilot site Koivikon Kartano Oy school is located near an operational farm with housing in the area and connected to a wood pellet heating system to create district heating used in conjunction with an oil boiler for back up. Peat logs are used as a fuel source and biogas is being generated. Robert asked Ville to consider a gas supply into each individual house. Ville confirmed that the pilot heating will be centralised in</p>	

terrace housing or cluster of houses. It is Ville’s intention to install a connected heating system into ten houses with an existing heating network place. Marcus is planning to replace existing oil burner units with biogas where a heat distribution system is already in place.

Ville demonstrated a micro-grid location in Puutarhatie which is typical rural housing with a number of houses connected to each other through a heating network. Each house has individual boilers and use oil or pellets and ground source heat pumps.

Jenny discussed the possibility of influencing Planning Policy Statements to include health care plans into rural areas to incentivise new build. Robert informed the partners that a new energy policy and new fuel poverty strategy is needed to incentivise health care plans into new build in NI.

Ville reported that houses in clusters have formed an ESCO or a social enterprise and have been developed using electricity, wood and solar as energy source. Robert stated that a joint approach is needed to being shared energy sources to houses. Ville reported the farmer on the demonstration site is pioneering biogas in Finland. Robert suggested that the Study day visit to Fermanagh should incorporate a visit to a biogas plant in Irvinestown, Co. Fermanagh which is produced from a silage plant.

Markus announced that the Finland pilot will run from Spring 2019 and the price for the biogas will determine its duration. Marcus stated that by adding biogas into the fuel mix which will operate wood pellets, adjustments of gas consumption can be made throughout the project. Ville is intending to operate 3 pilot projects with 1 pilot in existing houses. A publicity event will take place to demonstrate the biogas pilot to measure average thermal performance.




Robert updated partners on the 2nd demonstration pilot located in a rural setting in Lisnaskea, Co. Fermanagh. NIHE have consulted with tenants and a project meeting is to be set up with partners. The pilot will operate in 1970’s social housing stock. The pilot will give consideration to cavity wall construction, poor insulation, oil heating systems, old oil boilers and double glazing units. The current SAP reading of 60 is grade band D which denotes ‘average’. Tenants have been consulted and a kit will be installed. To demonstrate a micro-grid, NIHE would need clear costings and clear evidence and explanation of how the heating will work.

Robert reported that the airtightness in the pilot houses in Irvinestown is poor and added that no air tightness strategy exists. Ville stated that it would be an easy option to replace the existing burners with gas in a biogas heating system as in a bio methane gas with oil heating mix. In NI, LPG is the

	<p>most expensive solution and would not be considered a gas option. Robert added that the pilot project in Irvinestown will have a hybrid boiler system installed to the existing oil boilers with three electric elements. In addition there is a plan is to install two emersions and monitor oil usage, energy use and half hour cost of electric to try and demonstrate electric costs. The houses will contain an energy storage system and pv scheme to generate electricity and electric storage. The outcome of the pilot is to influence policy makers towards a green tariff. The hybrid system will provide a smart metering system as tried in Sweden. Robert stated that the heat pump option is too expensive to install whereas the hybrid model to install with oil boiler is more affordable. The demonstration pilot will see an installation of one heat pump into one property by Ulster University. A hybrid solution with data which works could influence future energy policies in NI. Robert continued to outline the costs associated with the demonstration pilot in Irvinestown.</p> <p>Jenny asked if the existing Grant boilers in the demonstration project could be fuelled by biogas since displaced oil is the main energy source in NI. The main thrust in the NIHE demonstration project is to install two emersions so as to demonstrate the need for a green tariff. The storage system is an additional research project by <i>Power On</i> who will install batteries free of charge and Phd students who will carry out data analysis. NIHE plan to start monitoring existing energy use in Autumn 2019 and after collecting five months of data, the kit will be installed to monitor energy usage.</p> <p>Robert informed partners that a Memorandum of Association is in place with Associate Partners to install energy storage batteries in the demonstration pilot project. Robert sought consensus from partners who agreed to bring the Associate Partners to the 3rd HandiHeat Full Partner Meeting on the 22nd/23rd May 2019 in Mayo.</p>	
2.4	<p>Work Package 4 Future Models (Toolkit)</p> <p>Erika demonstrated a toolkit developed by LUKE to measure farm-scale biogas plant on farms and emphasised that farmers are encouraged to build biogas plants. 23 farm-scale biogas plants operate throughout Finland. The toolkit is designed to ascertain how economically feasible and viable biogas farm-scale operations are. The biogas plant in Maatilojen biokaasulaitokset – LUKE Maanika farm-scale biogas plant provides heat and electricity for the farm, improved nutrient utilisation and environmental benefits. Erika reported that all heat and electricity used on the remote farm is used by the farm since it is not economically feasible to sell electricity since consumer electricity costs are so low.</p> <p>Erika discussed traffic fuel production and nutrient recycling through Palopuro Agroecological Symbiosis. Erika reported that this operation was an expensive option to manage and maintain.</p>	

	<p>https://blogs.helsinki.fi/palopuronsymbioosi/english/</p> <p>Jenny will provide Saija with a copy of the Economic Appraisal for the Irvinestown plant. A discussion took place around renewable heating and renewable electric which are only interventions available in Great Britain. In 2020 renewable targets will hopefully provide a new set of targets for 2030 climate change goals. Partners agreed that different countries will have different incentives at different times.</p> <p>Erika demonstrated a calculator tool which captured 2013 data and explained that there is a need to update the calculator tool and data due to price changes. Erika reported that LUKE plan to develop a similar calculator in English to capture raw materials, liquid cow manure in tonnage, excess grass silage from feeding to calculate bio methane production values through better technology, energy use, investment, incomes and costs, viability and final report and summary of fertiliser value. Ericka stated that rough estimates will be provided since precise calculations are not possible due to the independency of all biogas plants. She added that an energy production viewpoint can give energy details of how much energy can be produced and costs.</p> <p>It was suggested that the toolkit developed by PURE should aim to capture all data with an explanation of how you do e.g. Anaerobic Digestion would have to provide an overview of how operations are carried out with financial explanations.</p>	
2.5	<p>Work Package 6 - Communication (Clár I.C.H.)</p> <p>Alma reported that all actions from the 1st Partner Meeting will be considered in order to develop a Draft Communications Strategy in identifying who our target audience is, highlighted by Elizabeth at the 1st Full Partner meeting.</p> <p>Alma asked partners to confirm the target audience and asked if the web site should be an interactive and learning platform. Robert asked all partners to complete the Communication Questionnaire issued by Clár I.C.H. by close of business Thursday. Clár I.C.H. reported that a Communication Strategy would be drafted by March 2019. It was agreed that the Work Package Toolkit should last for 5 years.</p> <p>Robert stated that two key conferences are required and should be hosted at the demonstration sites in Finland and Irvinestown after Year Two and Year Three of the project. Partners agreed to a mid-conference held after two years in September/October 2020 with a final conference in Autumn 2021. Catherine will provide Clár I.C.H. with the Terms and Conditions for Twitter and Facebook from the NIHE Communications Team. Guidelines around Governance #handiheat and User/Administration rights to</p>	<p>All</p> <p>All</p> <p>Catherine</p>

	HandiHeat partners will be provided by NIHE.	
2.6	<p>Work Package 5 - Existing Policy Gap Analysis (ARC Healthy Living Centre)</p> <p>Jenny highlighted the lack of consistency with definitions and language across the regions and therefore a degree of definition synergy must be applied (T2). Jenny referred to the fuel inequality toolkit and a Health England toolkit course of development roadmaps and toolkit and added that partners must ensure there is practical implementation legacy from the HandiHeat project.</p> <p>Jenny referred to T4 and issues between roles of charity and influencing and stated that charities must be careful in terms of advocacy space. Jenny added that she believes there is significant opportunity to develop on this piece and advised that NGO's in America shape most policies.</p> <p>Robert reminded partners of the 4 Deliverables and outputs of HandiHeat:</p> <ol style="list-style-type: none"> 1. Policy Review, Fuel Poverty, Health/Housing and Winter Deaths 2. Benchmark existing Best Practice across Partner countries 3. Demonstrate Pilots in Finland and NI 4. Toolkit of Best Practice Policies and Sustainable Solutions for Retrofit 	
3.0	<p>Financial Update</p> <p>The Management Accountant announced that budget adjustments must be made by the Lead Partner after the end of every year and added that there is an opportunity once a year to move money around. Partners were reminded that minor spend under €60,000 and major adjustments over €60,000 must seek approval by the Managing Authority. Stephen confirmed that the Lead Partners Management Accountant will have sight of all partners budgetary spend. Robert agreed that a discussion on financial adjustments will take place with all partners prior to Lead Partner meeting in the Faroe Islands, October 2019.</p>	
DAY 2		
4.0	<p>Welcome and Apologies</p> <p>Robert welcomed partners to Day 2 of the 2ND Partner Meeting in Finland and welcomed guest speakers.</p>	
4.1	<p>Presentations</p> <p>Robert Clements opened Day 2 with a HandiHeat overview.</p> <p>Jannu Koponen - NN Regional Council of Central Finland presented on the following:</p> <ol style="list-style-type: none"> 1. Bio-economy 2. Educational economy/actors 3. Cyber-related topics/security 4. Health related topics 5. Tourism <p>Jannu reported that 9% of wood biomass is located in Central Finland. Discussion took place around Forest based bio-economy, Regional</p>	

	<p>development and Bio-energy (2016 figures).</p> <p>Kannu reported that 45% of total energy consumption in Finland is renewable energy (including transport). The renewable target by 2030 is 60% of total consumption (in accordance with the Climate Change Mitigation Plan 2030). http://www.ym.fi/en-US/The_environment/Climate_and_air/Mitigation_of_climate_change/National_climate_policy/Climate_Change_Plan_2030</p> <p> Koponen07022019.pdf</p>	
4.2	<p>Outi Pakarinen - NN Regional Council of Central Finland</p> <p>Outi presented on the Status of Biogas in Central Finland and explained how biogas is drawn from landfill and sludge, waste water and residues from agriculture. Biogas production in Finland (in accordance with Map: Finnish Biogas Association)</p> <p>Total production: 920-1140 GWh Heat 400-480GWh Electricity 170 Gwh Traffic (2017) 27 GWh (estimation) Biogas potential 9-16 TWh</p> <p> Pakarinen_7.2.2019.pdf</p> <p>https://www.fedarene.org/best_practices/public-procurement-of-buses-with-100-renewables-target</p>	
4.3	<p>Markku Paananen - NN Bio Economy Campus/JAMK</p> <p>Markku reported that district heating combined heat and power is the most efficient heating system worldwide. Markku presented on the history, the uses of Bioenergy and of lessons learnt in establishing bi-energy into the economy through promotion:</p> <ol style="list-style-type: none"> 1. What do you want 2. How do you introduce your applications to the market 3. How do you conquer the market <p> Paananen07022019.pdf</p>	

4.4	<p>Site Visits</p> <p>Metener Company/Kalmari Farm, Laukaa The first site visit took partners to Kalmari Farm Biogas Plant, Laukaa. A biogas plant for Kalmari farm in year 1998, the plant has produced biogas continuously since then. Biomasses have been mainly cow slurry and waste from food industry. Energy is used for heat and power production as well as for traffic fuel since 2004.</p> <p>Satavuo Eco-School in Laukaa, Finland Eco School The second site visit was to Satavuo eco-school in Laukaa, Finland. The school was built as a part of the Terve Talo scheme. The design of the eco-school is driven by the sustainable construction ideal <i>“a school for a hundred students for a hundred years.”</i> The school promotes health and ecological construction and is part of the Terve Talo scheme.</p>	
5.0	<p>Date of Next Meeting Partners agreed the dates of the next Full Partner Meetings: 22nd/23^d May 2019 at Claremorris, Co. Mayo. 24th/25th September 2019 – Iceland Jan/Feb: Shetland – To be confirmed</p>	

Summary of Agreed Actions		
1.0	All members to populate questionnaire issued by Clár I.C.H. by Thursday 7 th February 2019.	All
2.0	Agree two conference dates and confirm locations.	All
3.0	Add a wish list to the Communication questionnaire.	All
4.0	Agree logo design for improving energy efficiency for rural communities.	All
5.0	Slight amendments to template and capture rural data.	Jón
6.0	Comments to Austurbru ses template by close of play Friday 15 th February 2019.	All
7.0	Summarise report on own energy production consumption by May 2019.	All
8.0	Robert Clements to email Robert Prinz to look at rural communities for feedback.	RC/RP
9.0	Look at PPS into project to promote and enhance renewables in cluster of houses.	Jenny
10.0	Power On and UU to visit May in May 2019 - discuss inputs to pilot demo.	RC
11.0	FLC details to Catherine.	All
12.0	Reporting period – FLC certificates from within 8 weeks from key date (1 April 2019).	All
13.0	Robert will issue GOL with AD signature and Partnership Agreement with all partner signatures.	RC