This Publishable Report is provided as part of Galway Energy Co-operative SEC's Energy Master Plan and is for illustrative public information purposes. The Homeowner's reports are confidential and thus not published here.

ENERGY AUDIT REPORT

Detached 2-Storey Dwelling– 1991 – Cavity Block – Area 318.8 m²
Current BER – C3 – Energy Use 212.87 kWh/m²/yr – Total Energy Use: 67,862 kWh/yr

Existing Building Details

Building Elements		U-Value ($W/m^2.K$)	Heat Loss (AU) [W/K]
Walls	300mm Filled Cavity	0.60	142.91
Walls	Timber Frame	0.52	18.50
Roof	Pitched Roof – Insulated on Ceiling	0.49	14.92
Roof	Pitched Roof – Insulated on Ceiling	0.49	30.21
Roof	Pitched Roof – Insulated on Ceiling	0.49	8.10
Roof	Pitched Roof – Insulated on Rafter	0.49	20.60
Ground Floor	Solid	0.57	83.86
1st Floor	Non-Heat Loss Floor	0	0
Floor	Non-Heat Loss Floor	0	0
Windows	Double-glazed Air-Filled X 6	3.10	745.38

Existing Heating Characteristics			
Heating System		Energy	Efficiency (%)
Primary Heating System	Mains Gas Condensing Boiler, primary pipework uninsulated	Natural Gas	73%
Secondary Heating System	Open Fire	Manufactured Smokeless Fuel	
Domestic Hot Water	Heated with Primary heating system and immersion	Oil	73%
Cylinder	Cylinder Factory Insulated 25mm		
Controls	Radiator Controls		

Domestic Retrofit Guidelines (Step by Step)						
Proposed Interventions		Energy saving (kWh/m2/yr)	Revised energy rating (kWh/m2/yr)	Revised BER Rating	Annual energy saving (kWh/yr)	CO2 savings/yr (kg)
1	Upgrade Existing Windows to Achieve Minimum U-Value of ≤0.73 W/m ²K	25	187.93	C2	7,951	1,455.83
2	Upgrade Original Walls to Achieve Minimum U-Value of ≤0.20 W/m² K	30	158.71	C1	9,315	1,705.58
3	Instal 300mm Insulation on Flat Ceiling	12	146.53	B3	3,883	710.98
4	Install Air To Water Heat Pump (HP) - Upgrade Heating Controls & Hot Water to Full Time & Temperature Control	85	61.57	A3	27,085	4,959.26
5	Install 2kW Photovoltaic system	13	48.25	A2	4,246	777.44
	Overall kWh/m2/yr Savings Potential	165				

	Heat Loss Indicator post works (HLI)	1.6	W/K			
	BER Uplift	165	kWh/m2/yr,			

*Upgrades 1-3 are required before a Heat Pump (HP) can be installed. The Heat Loss Indicator must be ≤2 to qualify for grant assistance for HP installation

Estimated Costs Summary			
Measures		Estimated Costs (€/m^2)/Unit	Estimated Total Costs (€)
1	Windows Upgrade	€495.00/m^2	€24,255.00
2	Walls Upgrades	€185.00/m^2	€53,095.00
3	Roof Upgrade	€22.50/ m^2	€2,475.00
4*	Heating Upgrade (Primary)	(System)	€17,600.00
5	Install 2kW PV system	2KW (System)	€5,500.00
Total to achieve A3			**€102,925.00**
VAT @ 13.5%			€13,894.88
Subtotal			**€116,819.88**
PM Fee			**€7,204.75**
Total Build Costs			**€124,024.63**
ESTIMATED SEAI Grant @ 30% for participation in BEC Scheme			**€37,207.39**
Value of Energy Credits			**€2,071.00**
Total Cost to Homeowner including 30% Grant funding and Energy Credits			**€84,746.24**

*Minimum uplift required from Better Energy Community Grant Scheme

Savings Summary					
BER Rating	Energy Use (kWh/m^2/yr)	Energy Savings (kWh/yr)	Cost Savings (€/yr)*	Simple Payback, including Grant Funding (years)	CO2 Savings (kg)**
Current C3	213	()	0.00	-	
A2	28	52,480	€3,767.92	22	9,609

*Based on Natural Gas cost replacement @€0.0718/kWh

As a guide: a ten-year-old evergreen tree absorbs approximately 14 kg of carbon dioxide per year, so the carbon reduction for these works is the equivalent of **686 evergreen trees.