

Achieving Ireland's 2020 Renewable Heat Target

Background

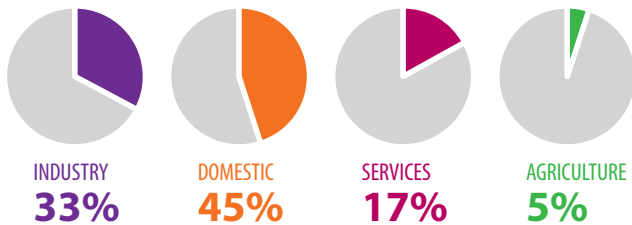
Ireland has a target to deliver 12% of final heat demand from renewable energy sources by 2020. While progress has been made in recent years on deployment of renewable heat technologies, energy forecast projections show that Ireland is likely to fall short of the renewable heat (RES-H) target. The government has recently published a Draft Bioenergy Plan that details measures aimed at closing the gap to the heat target and developing bioenergy supply. This analysis supports the development and implementation of this plan.

Aim

SEAI conducted a study to evaluate the gap to the 2020 renewable heat target. The work also examined the costs and impacts of policy options available – and the types of renewable heat technologies required – to close the gap to the RES-H 12% target by 2020.

How heat is currently used in Ireland

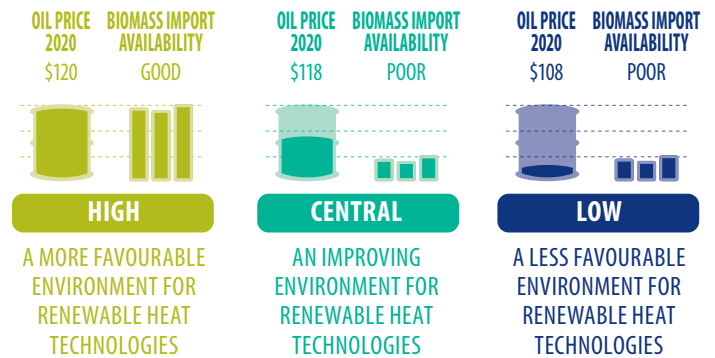
HEAT DEMAND BY SECTOR IN 2012



Approach

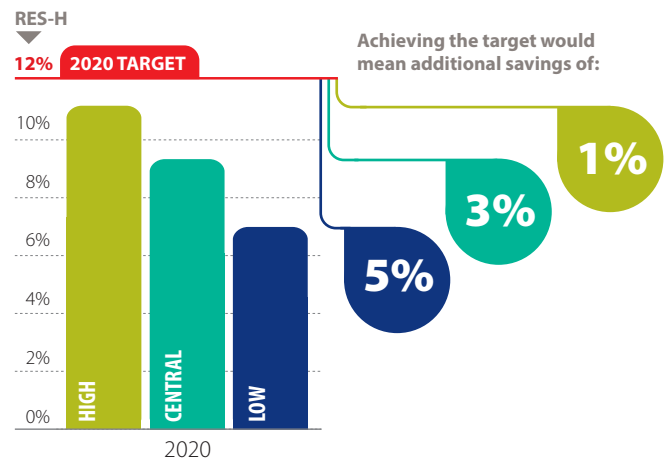
The analysis uses information of how different consumers choose heat technologies and how policy can influence these choices. The analysis accounts for the important factors that influence consumer choice including: the costs of renewable heat technologies, the costs of the alternative fossil fuel options and the availability and cost of biomass resources. Heat pumps, bioenergy and solar thermal installation options are considered as potential replacements for gas, oil and direct electric heating sources.

Three scenarios (High, Central and Low) are examined to assess the impact of future changes in fossil fuel costs, biomass resource availability and heat demand growth on the gap to the target and the potential policy costs of closing the gap.



Gap to RES-H target

In all three scenarios, without further policy measures, the RES-H 12% target is not reached. The estimated shortfall is between 1-5 percentage points across the scenarios. The growth in the High scenario is driven by higher fossil fuel prices, making renewable heat technologies more cost competitive. The lower fossil fuel prices in the Central and Low scenarios results in fewer renewable technologies being installed by heat consumers.



THE GAP TO THE RES-H TARGET IN THE CENTRAL SCENARIO COULD BE CLOSED BY THE INSTALLATION OF RENEWABLE TECHNOLOGY IN:



MORE THAN HALF THE MEASURES IN IRELAND'S ENERGY EFFICIENCY PLAN ARE AIMED AT REDUCING THE DEMAND FOR HEAT ENERGY AND AS SUCH HAVE AN ESSENTIAL ROLE IN THE ACHIEVEMENT OF THE RES-H TARGET.

Options to achieve RES-H target:

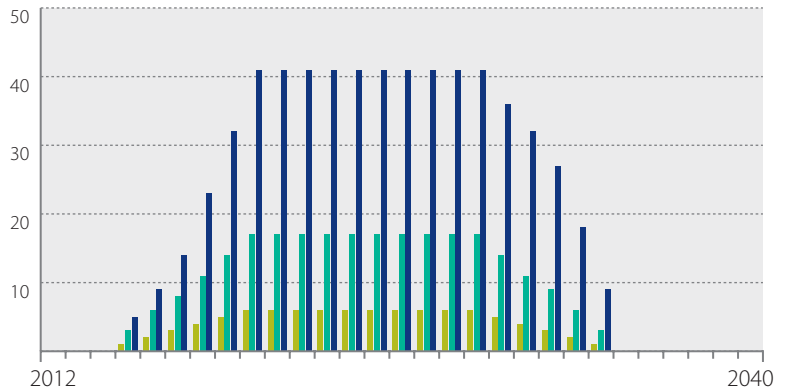
A range of policy options are available to bridge the gap to target, each having advantages and disadvantages including a range of funding costs. These factors taken together influence the policy choice. The policy options examined were a feed-in tariff (FiT)/Bonus, upfront grants and a carbon tax increase. The FiT/Bonus scheme is presented here to illustrate the impact of a policy intervention similar to what may occur under a renewable heat incentive (RHI) which has been proposed in the draft Bioenergy Strategy.

FIT/BONUS (RHI)

Price support is offered to cover the additional cost of producing a unit of output from a renewable technology as compared to a fossil fuel alternative. Renewable installations receive support for a 15 year period.

SCENARIO	AVERAGE ANNUAL COST (€M PER ANNUM)	TOTAL DISCOUNTED COST TO 2035 (€ M)	INDICATIVE TARIFF LEVEL REQUIRED (€/MWH)
HIGH	€4.5	€54	€3
CENTRAL	€13	€153	€8
LOW	€31	€361	€12

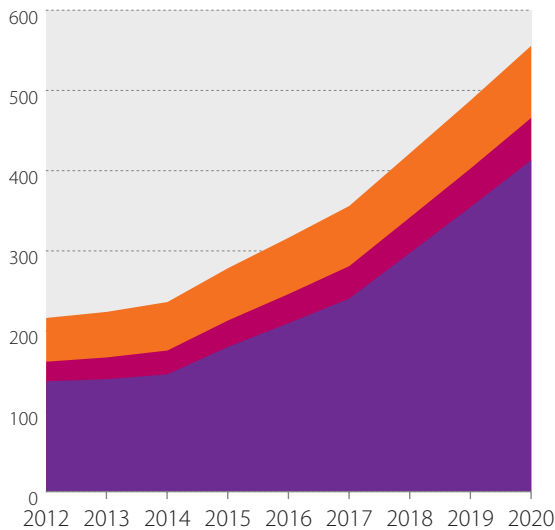
Annual policy cost (million €)



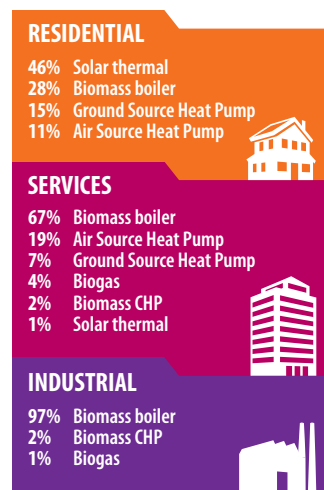
Renewable Heat Technology uptake with FiT/bonus policy support in Central Scenario

Renewable heat output by renewable technology incentivised by the FiT/bonus (RHI) scheme in the Central scenario is shown. Biomass boilers, replacing oil in large industrial and commercial sites, account for the majority of the increased uptake, as the most cost effective options. Additional uptake of heat pumps in the commercial sector also occurs. Biomass and Anaerobic Digestion Combined Heat and Power uptake rates remain low.

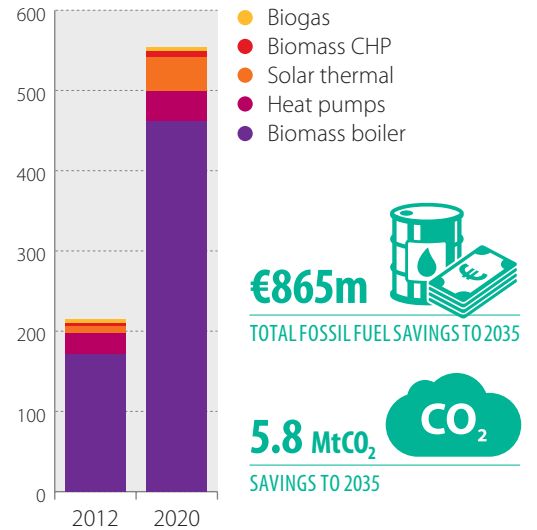
Renewable Heat Output (ktoe) by Sector:



Heat Output % by Technology in each Sector:



Renewable Heat Output (ktoe) by Technology:



This results in 5.8 MtCO₂ avoided between 2015 and 2035 and estimated fossil fuel savings of €865 million over the same period. The investment in domestic supply chains is estimated at approximately €200 million per year.



To download a copy of the full report Renewable Heat in Ireland to 2020, visit www.seai.ie