

Getting to 7%

IWEA Webinar Tuesday 26th May 16.30 – 17.30



This webinar will begin shortly

Presented by David Connolly, CEO IWEA



Moderated by Kevin O'Sullivan, Environment and Science Editor



Housekeeping:

- As this is a webinar all participants will have their video and audio facility muted.
- We would encourage you to take part in our Q&A. You will find the Q&A box along the bottom of your screen.

What does the <u>maths</u> say is required by 2030? 7% per year CO2 reduction = 19 Mt of Carbon in 2030

• Ireland's Energy Sector = 40 Mt

	Carbon Reduction		
Year	% per year	Mt per year	Total Carbon (Mt)
2020	7%	2.8	40
2021	7%	2.6	37
2022	7%	2.4	35
2023	7%	2.3	32
2024	7%	2.1	30
2025	7%	1.9	28
2026	7%	1.8	26
2027	7%	1.7	24
2028	7%	1.6	22
2029	7%	1.5	21
2030	7%	1.4	19

CO2 Map for the Irish energy sector



Getting to 19 Mt of Carbon in 2030 (7%/year)

	Carbon (Mt/Year)
1. Starting Point in 2020	40
2. Total Savings (listed below)	20.8
80% Renewable Electricity	9.3
600k Heat Pumps Replace Oil Boilers	3.0
900k Electric Cars	2.8
20% Heat Savings in Buildings	1.6
20% of Private Car Mileage to Public Transport, Walking or Cycling	1.2
20% Renewable Heat in Industry	0.8
20% Heat Savings in Industry	0.6
10% District Heating for buildings in Cities	0.3
10% Biogas for gas networks that heat buildings in Cities	0.3
10% Clean Fuel Blend in Aviation	0.3
20% Hybrid Trucks and Light Goods Vehicles	0.3
5% Extra Biofuel Blend in Trucks & Busses	0.15
3. End Point in 2030	19.2
Target in 2030 for 7% Per Year CO2 Reduction	19.4

Delivering the 70by30 target with IWEA's 70by30 Implementation Plan (Four Reports)

- 1. 70by30 Implementation Plan: Building Onshore Wind
 - Final Draft Complete
- 2. 70by30 Implementation Plan: Building Offshore Wind
 - Modelling Underway
- 3. 70by30 Implementation Plan: Saving Money
 - Complete
- 4. 70by30 Implementation Plan: Saving Power
 - Final Draft Complete







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70by30 for Electricity: Cost Neutral @€60/MWh



Figure 1 Summary of total Renewable Energy scenario costs and benefits relative to the Fossil Fuel scenario (2020-2030)



75% of 125k = 90k x 10 years = 900k EVs in 2030

ScleanTechnica #1 electric vehicle, so About Exclusives Electricity EV Reviews Tesla I

Norway EV Market Share Breaks All Records — 75% Of Vehicles Sold Have Plugs!



Follow CleanTechnica on Google News.

April 2nd, 2020 by Dr. Maximilian Holland

Norway's electric vehicle revolution broke new ground in March 2020, with plug-in vehicles now representing *over 75%* of vehicle sales in the country. Of the remaining quarter share, plug-less hybrids took 7.1%, diesel 10%, and petrol 7.7%.



Transportation & Logistics > Vehicles & Road Traffic

Number of passenger cars sold annually in the Republic of Ire





Cycling – Rush Hour in Copenhagen



Electric Roads for 2 Million Cars

- The battery in a typical EV costs €10k+
 - What if we could reduce size of the battery we need? Then we would save a lot of money!
- If we build electric roads, then we need smaller batteries to get around.
 - Electric roads cost ~€1-2 million per km, so 2000 km of eRoads = €2-4 billion (see map)
- So if we can save €3000 per EV due to a smaller battery (~100-150 km less range), then for 2 million cars, you have saved €6 Billion
 - <u>AND</u> you have created the option to use electricity for heavy-duty vehicles



Key Recommendations for the Heat Sector





This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 695989.

www.heatroadmap.eu @HeatRoadmapEU





Energy efficiency first BUT not forever





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www.heatroadmap.eu @HeatRoadmapEU



District Heating: Sample 100,000 Homes in Dublin





- Assuming 100,000 Homes need ~1.2 TWh of heat per year
- District Heating:
 - Pipes for 100,000 Homes = ~€100 Million (lasts 40+ years)
 - Fuel will be very cheap currently thrown away!
 - (Side Note = More heat thrown away in Dublin each year than required to heat the whole city so lots of cheap heat for DH!)
- Gas:
 - One Boiler = €3000
 - 100,000 Boilers = €300 Million (lasts ~20 years)
 - Fuel will be expensive and increasing with carbon tax i.e. gas





FIGURE 3.5 Market shares in accordance with net heat demands (except for local heat pumps) for various heat supplies to the Swedish residential and service sectors since 1960. Data source: Statistics Sweden and some older sources.



Renewable Heat Share

Figure 23: Renewable heat share in 2018 for EU Member States



Source: Eurostat