An Roinn Fiontar,
Trádála agus Fostaíochta
Department of Enterprise,
Trade and Employment

Decarbonising the Commercial Built Environment

Roadmap for the Decarbonisation of Commercial Buildings Update and Energy Performance of Buildings Directive (EPBD)

Presentation to the Retail Forum Green Transition Working Group
20 November 2024

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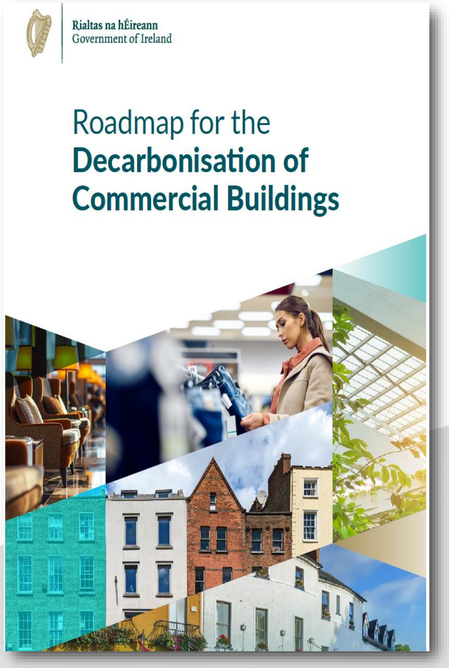
Topics/Issues

- Roadmap for the Decarbonisation of Commercial Buildings Update
- EPBD Update
- Next Steps

Decarbonisation of Commercial Buildings Roadmap- Status Update

- Wide level of engagement over the past 12-18 months including representative bodies, individual SMEs, ENACT Programme and across Departments

- Roadmap is in final draft form and awaiting sign off by the incoming Government and will be published shortly afterwards



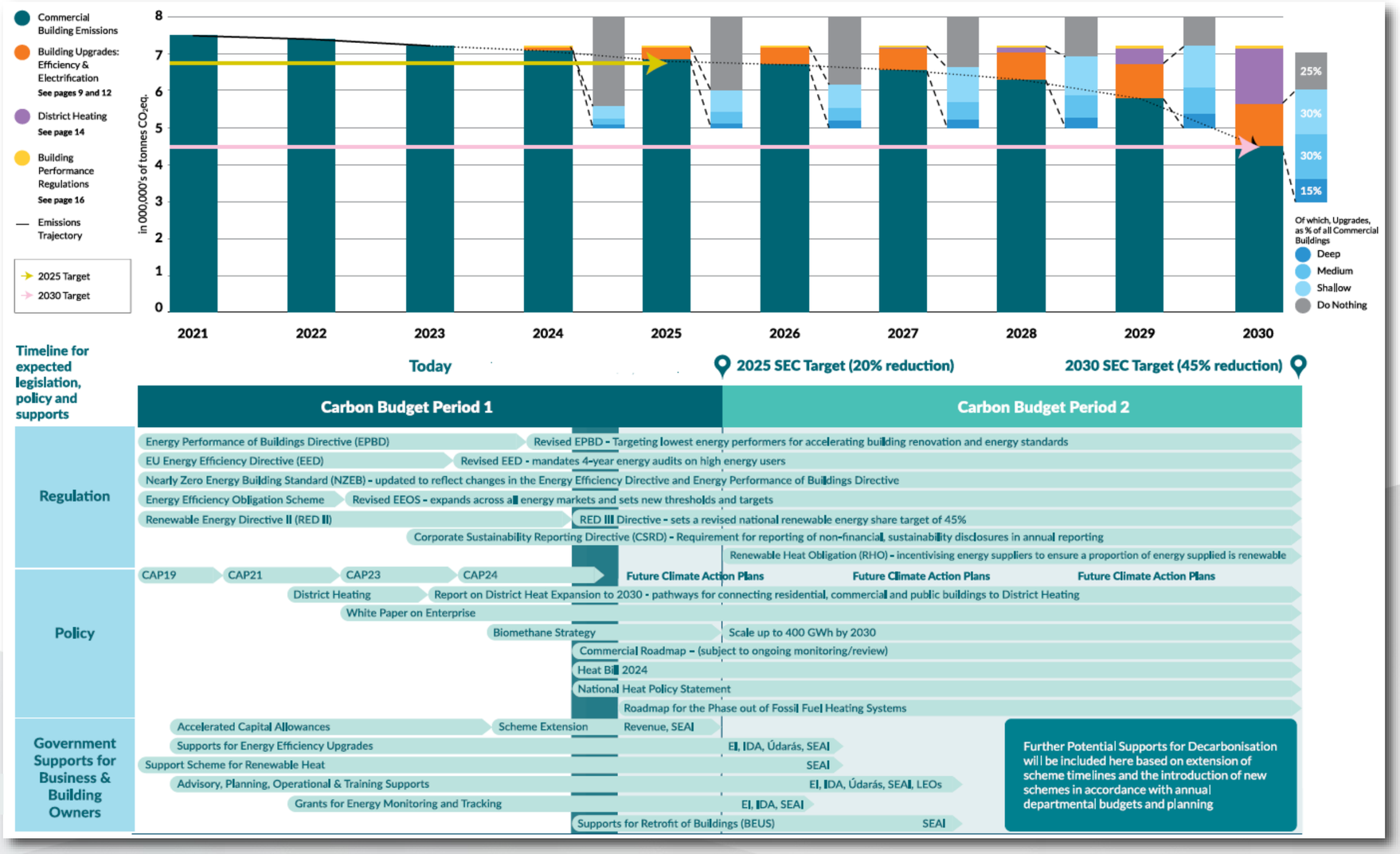
Our Climate Objectives- Decarbonisation of Commercial Buildings

- Net Zero emissions by 2050- all buildings will need to switch to electric and heat pumps, efficient District Heating or other renewable sources- Roadmap sets out a trajectory to achieve this.

- Commercial buildings must reduce emissions by 20% by 2025 and by 45% by 2030 based on 2018 levels. Commercial buildings have a carbon budget of 7 mtCO2 for 2021-2025 and 5 mtCO2 for 2026-2030.

- Approximately 120,000 commercial buildings in Ireland. Significant challenge, but there are benefits to taking action including energy cost savings, more comfortable work environments, more competitive and sustainable businesses and more valuable and sustainable buildings.

Decarbonisation of Commercial Buildings Roadmap- Trajectory to 2030



Decarbonisation of Commercial Buildings Roadmap- Issues

- Recognises that different technologies, upgrades and updates will help us achieve our targets (district heating; energy efficiency and electrification, Building Performance Regulations)

- Regulatory, Legislative changes and new/updated Policy areas at EU and national level are ensuring that we will achieve our targets

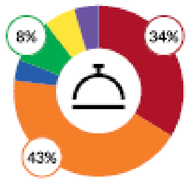
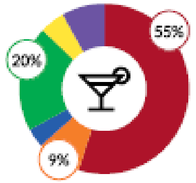
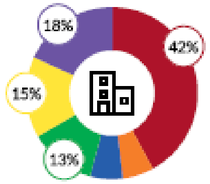
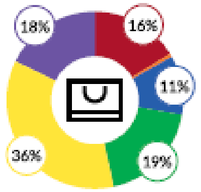
- Recognises a number of challenges including communications and raising awareness; split incentive; skills and supply chain; data and information; State supports.

Decarbonisation of Commercial Buildings Roadmap- Proposed Solutions

- Deliver a Communications and Awareness campaign tailored to specific business sectors
- Monitor and improve State supports available
- Develop a voluntary code of conduct for commercial tenancy/lease agreements to encourage the use of green lease terms and promote reduced carbon emissions

- Sector specific guidelines will be published to help business to decarbonise their buildings
- Pan for the data and information that will be required under the EPBD at national and individual building level
- Identify specific skills needs in relation to our commercial buildings to help us achieve our climate objectives

Decarbonisation of Commercial Buildings Roadmap- Key Sectors

	Hotels & Hospitality	Bars & Restaurants	Offices (Commercial)	Retail
Annual Energy Consumption (in kWhrs/m²)				

Key: Heating · Domestic Hot Water · Cooling · Auxiliary · Lighting · Equipment

	Hotels & Hospitality	Bars & Restaurants	Offices (Commercial)	Retail
Approximate Building Stock	~4,600 Hospitality Units (of which ~850 Hotels)	~6,700 Bars/Pubs ~8,400 Restaurants	~ 65,000 Office Units	~ 24,000 Retail Units
Average Floor Area	3,166m²	287m²	786m²	324m²
Fossil Fuels as % of Heating Demand	98%	70%	29%	34%
Total Annual Building Emissions*	446,000 tonnes	223,000 tonnes	82,000 tonnes	115,000 tonnes

	Hotels & Hospitality	Bars & Restaurants	Offices (Commercial)	Retail
Every building is different – and a detailed energy audit is an important starting point. Based on the average characteristics of buildings in these sectors, these are potentially high-impact measures.	Use digital systems to monitor, control and optimise energy use for heating and cooling, ventilation and domestic water needs that can be adjusted based on occupancy.	Switch to electricity or renewable energy options for space and water heating (and cooling) including heat pumps and solar PV and or solar thermal systems.	Optimising the office layout to ensure heating is only provided in occupied areas and standardised temperature set points at an efficient level with dedicated personnel control.	Installation of heat recovery in ventilation systems to recover energy waste and minimise system heating requirements.
	Installing solar thermal that can generate heat/hot water.	Upgrade to energy efficient appliances including LED lighting and heat pumps.	Improving the insulation of the building (roofs, walls and floors) which can lead to lower heat demand.	Upgrading refrigeration units to highly energy-efficient models with potential heat recovery opportunities.
	Review potential for free heating or cooling through heat recovery between systems, and/or using a heat-pump.	Use digital thermostat and area zoning controls.	Upgrade windows and external doors to triple glaze.	Replace direct electric heaters with heat pumps, depending on building fabric.

* Emissions measured are Scope 1 emissions. These are on-site emissions only. They do not include emissions from transport, supply chains or the emissions generated on the energy grid.

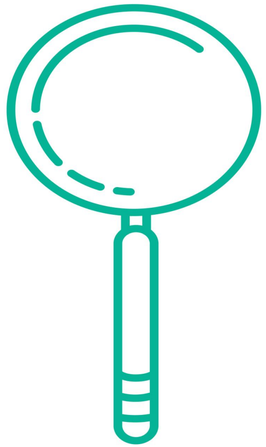
Decarbonisation of Commercial Buildings Roadmap- Next Steps

- Publish Roadmap following sign off by Government
- Engage with the Working/Implementation Group and the Heat and Built Environment Taskforce regarding what issues to focus on first for implementation
- Communicate and raise awareness with business of this issue at times and events most suitable to them and where they will be present.

Energy performance of buildings directive (EPBD)

What does it mean for non-residential buildings?

EPBD Update



Previous EPBD

- Mandate for new buildings to be Nearly Zero Energy Buildings (NZEB)
  - Very high energy performance
  - The very low amount of energy required is covered to a very significant extent by energy from renewable sources produced on site or nearby

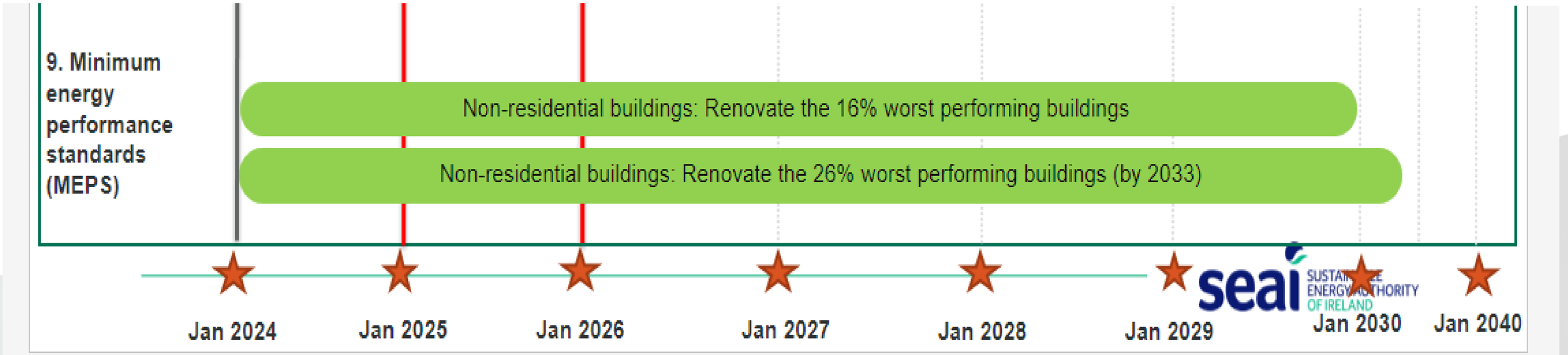
Recast EPBD- Aims

- To increase renovation rates and to have a decarbonised building stock in Europe by 2050.
- Focus on the worst-performing buildings in each country.
- All buildings in Europe to be zero emissions buildings (ZEBs) by 2050

Recast EPBD- Latest Update

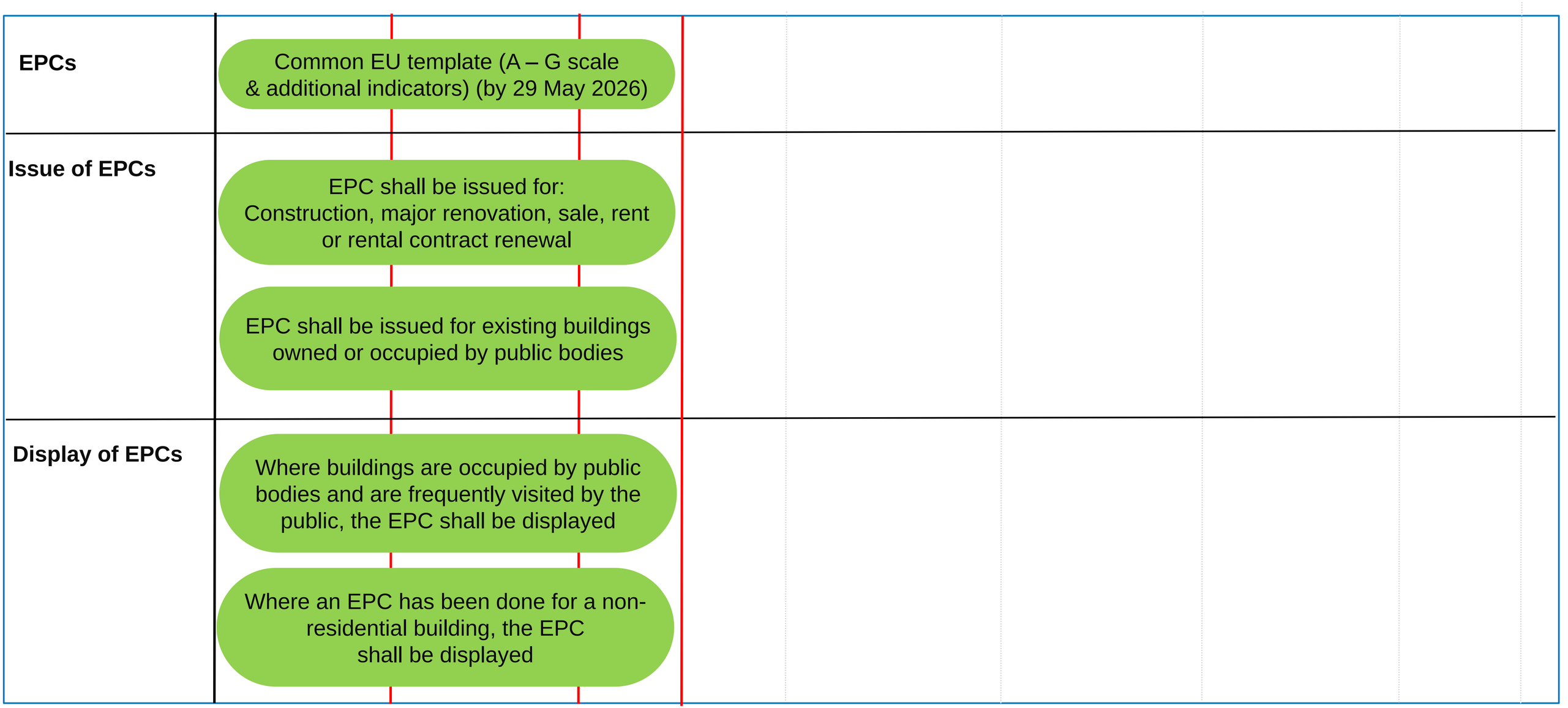
- Formally adopted – 29 May 2024
- Transposed into Irish law within 1-2 years of final adoption
- Requirements to be in place by various dates

Minimum energy performance standards for non-residential buildings



EPBD requirement roadmap

Deadline Date for implementation as set out in EPBD



EPBD requirement roadmap

★ Deadline Date for implementation as set out in EPBD

Solar energy in buildings

By 29 May 2026

Member States shall ensure that all new buildings are designed to optimise their solar energy generation potential on the basis of the solar irradiance of the site, enabling the subsequent cost-effective installation of solar technologies.

On all new public buildings and non-residential buildings with useful floor area > 250sqm

Existing public buildings with useful floor area > 2000sqm

> 750sqm

> 250sqm (by 31 Dec 2030)

On existing non-residential buildings with useful floor area > 500sqm

If major renovation, an action that requires an admin permit for renovations, roof works or install of a TBS

Jan 2024 | Jan 2025 | Jan 2026 | 29 May 2026 | Jan 2027 | Jan 2028 | Jan 2029 | Jan 2030 | Jan 2040

New buildings: Life-cycle global warming potential

EPBD requirement roadmap

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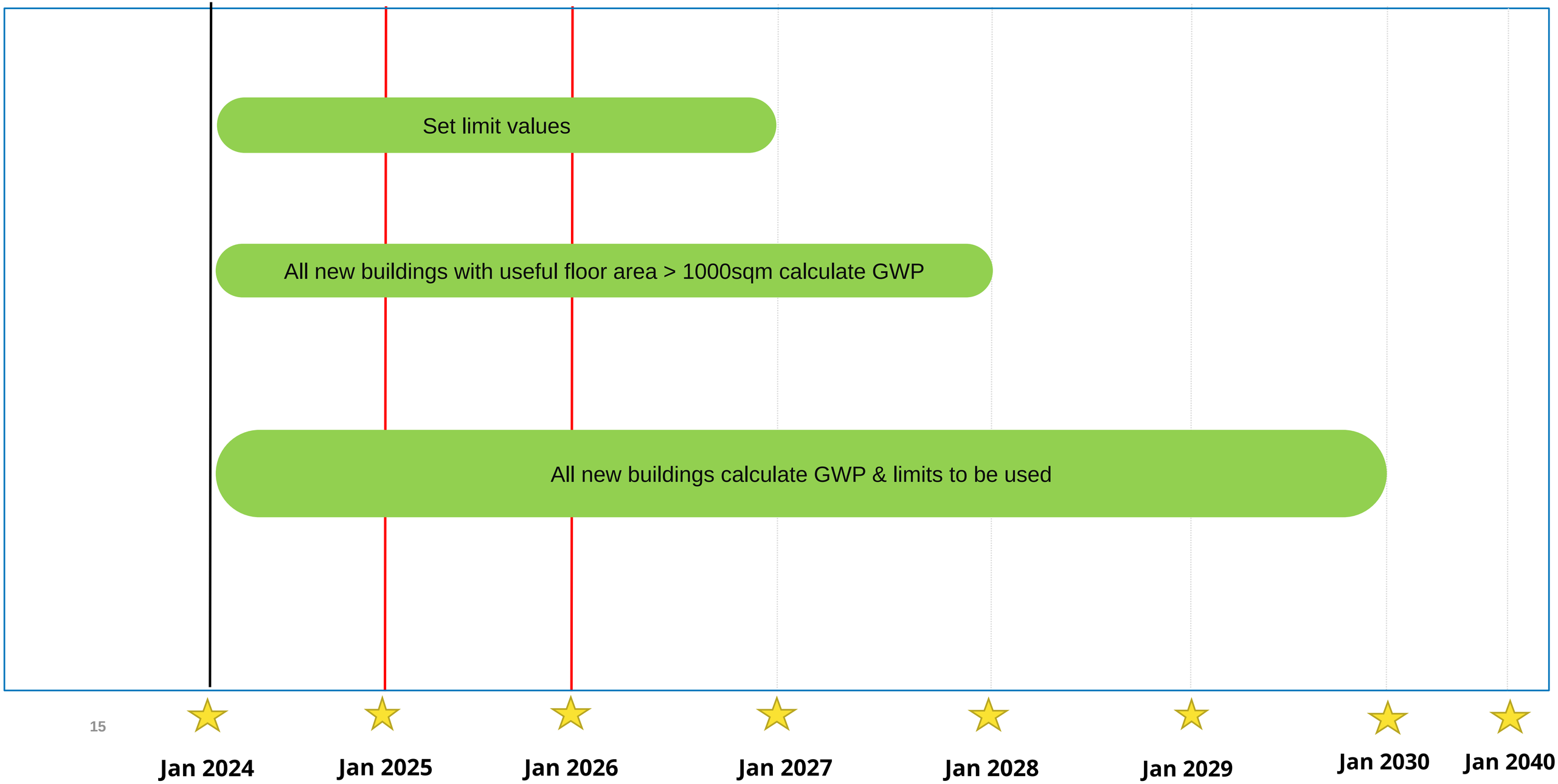

Zero emissions buildings (ZEB)

EPBD requirement roadmap

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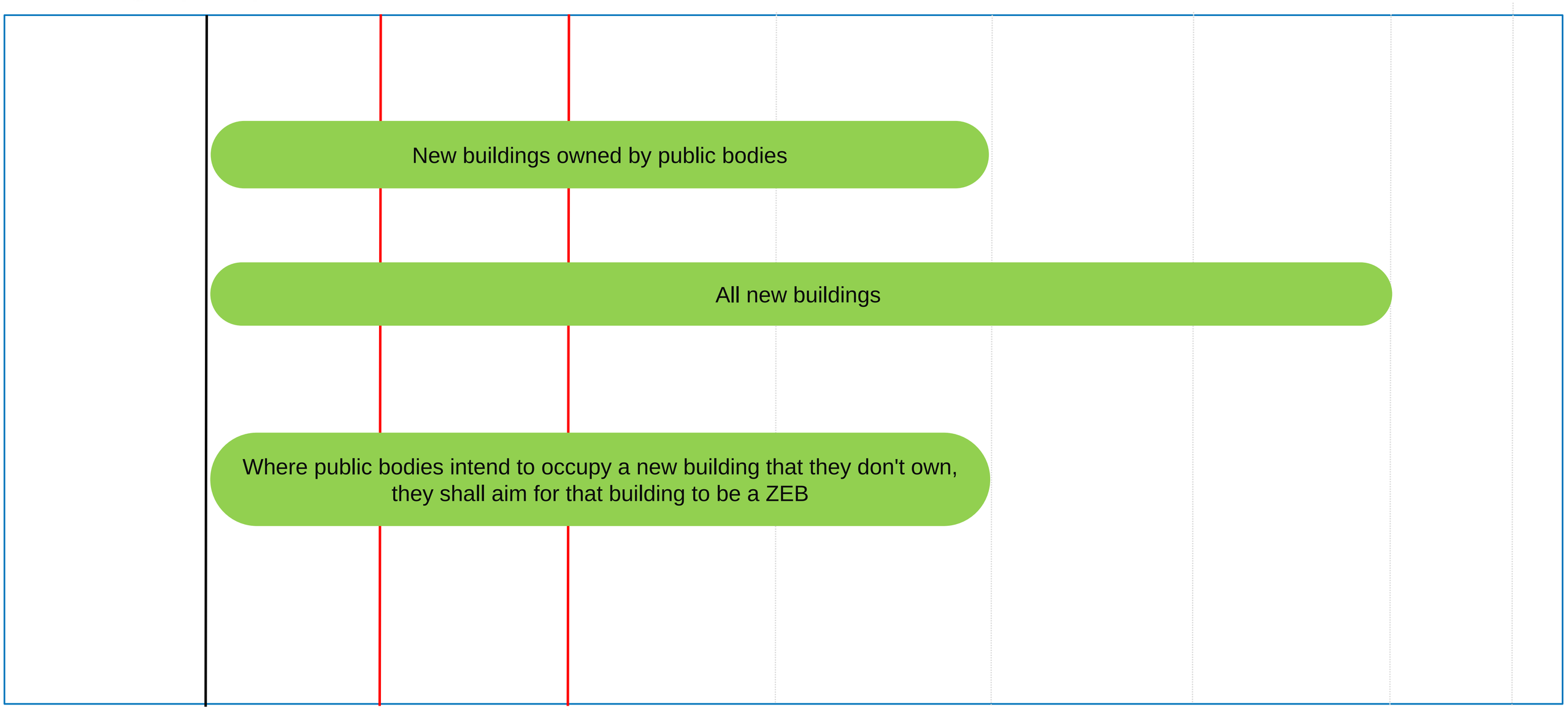

Technical building systems

EPBD requirement roadmap

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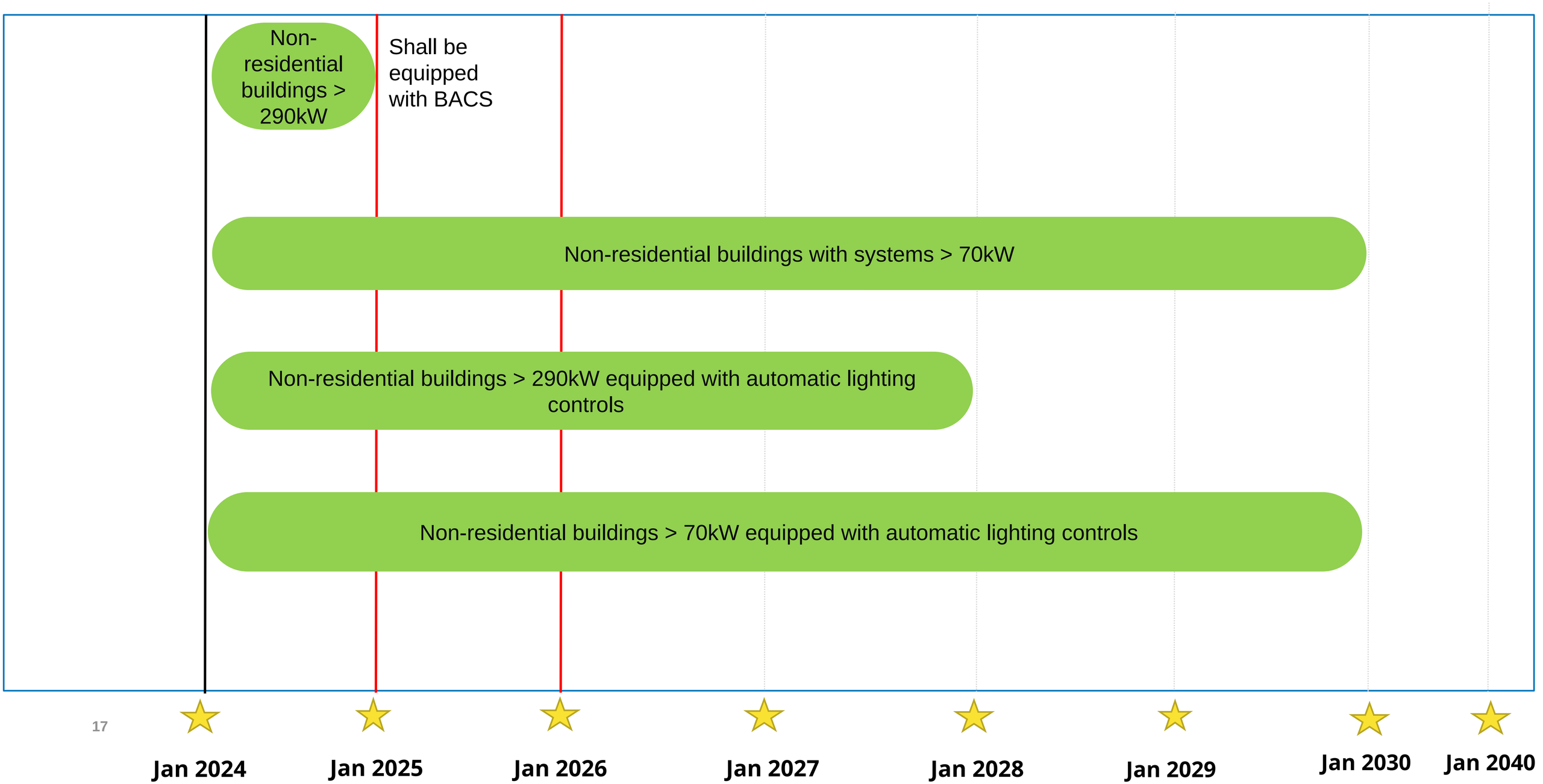

EPBD requirement roadmap

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Infrastructure for Sustainable Mobility

Install at least 1 recharging point for every 5 parking spaces

Install pre-cabling for at least 50% of spaces & ducting for the remaining spaces

Bicycle parking spaces for at least 15% of average or 10% of total user capacity

Non-residential buildings with more than 5 car parking spaces: new & undergoing major renovations (except offices)

Member States may postpone implementation of the requirements until 1 Jan 2029 for non-residential buildings that have been renovated in the 2 years prior to April/May 2024

Install at least 1 recharging point for every 2 parking spaces

Derogation for office buildings with more than 5 car parking spaces: new & undergoing major renovations - check date

Member States may adjust requirements for the number of bicycle parking space for specific categories of non-residential buildings that are not typically accessed by bicycles

★ Jan 2024 ★ Jan 2025 ★ Jan 2026 29 May 2026 ★ Jan 2027 ★ Jan 2028 ★ Jan 2029 ★ Jan 2030 ★ Jan 2040

EPBD requirement roadmap

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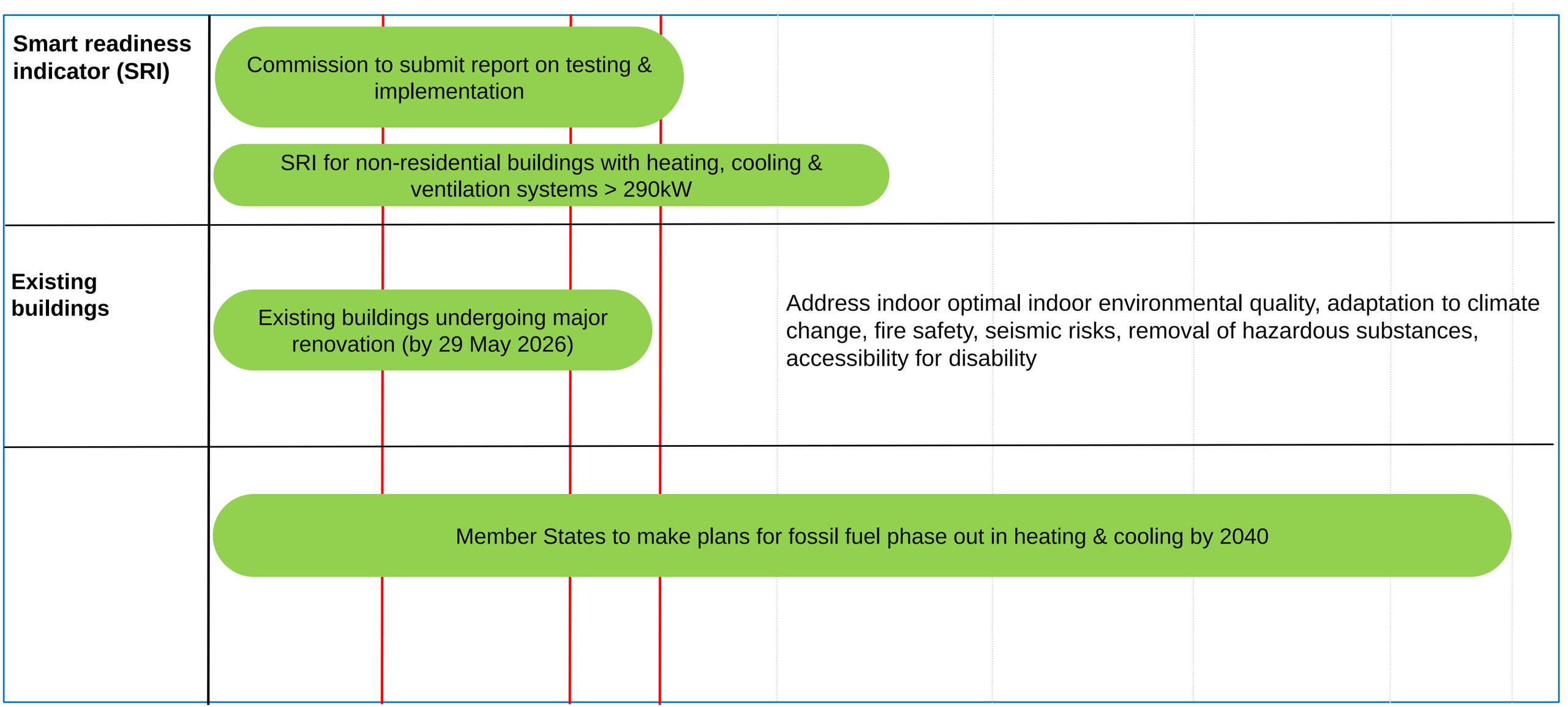

Jan 2024 | Jan 2025 | Jan 2026 | 29 May 2026 | Jan 2027 | Jan 2028 | Jan 2029 | Jan 2030 | Jan 2040

Main Impacts for non-residential buildings

Solar energy on buildings

Renovation passports - provide a sequenced roadmap for staged *deep renovations*

Building automation and control systems

Rescaling of BER scale **A – G**

Minimum energy performance standards Renovating the **worst** performing buildings

EV charging infrastructure

Calculate and disclose the life-cycle **global warming potential** of buildings

New standard for new buildings - zero emissions buildings (ZEB)

Digital Building Logbooks & ease of data exchange (with building stakeholders)

Report on the **Smart Readiness** of buildings

Indoor environmental quality

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Thank you!