

Net zero implementation: Decarbonising heat in buildings

EMAQ webinar (Net Zero 3)

17th April 2024



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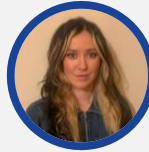


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AGENDA

What is implementation?

When should implementation be considered?

Key questions to consider

Heat decarbonisation planning – non-domestic

Domestic property decarbonisation and fuel poverty

Lessons from PSDS

Questions and Discussion

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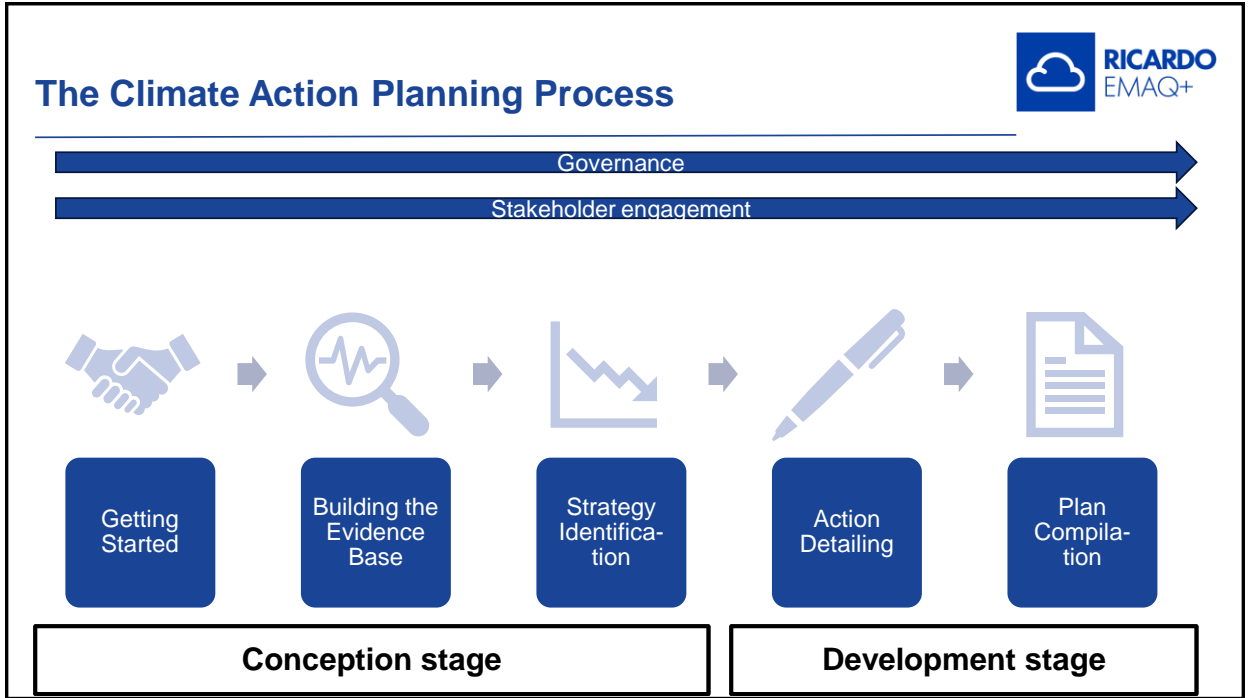
What is implementation?

Implementation refers to the process of putting a plan or policy into practice and delivering the intended actions and outcomes of that plan.

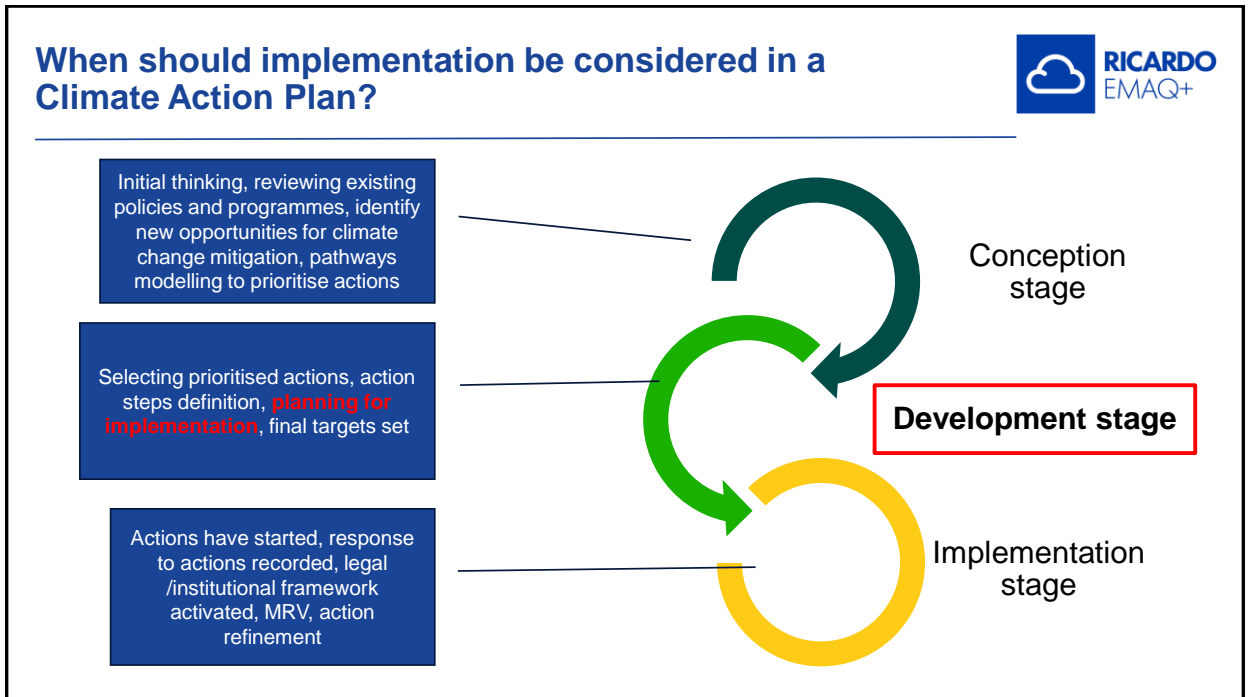
What?

How?

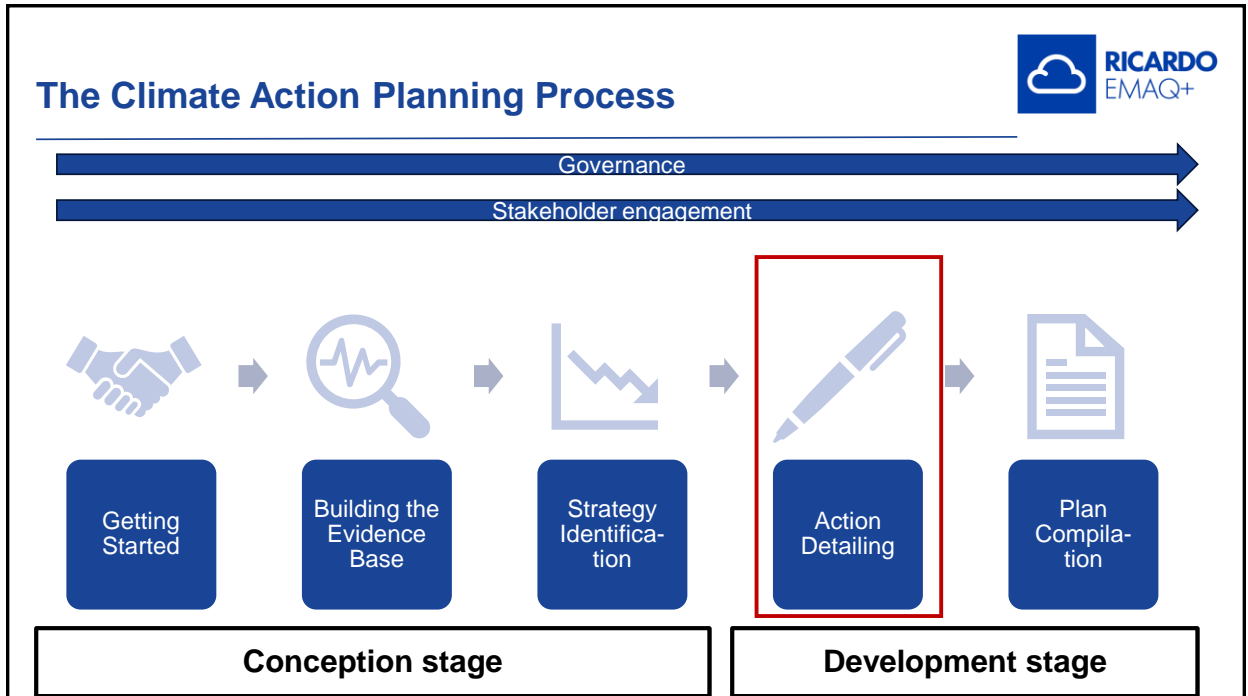
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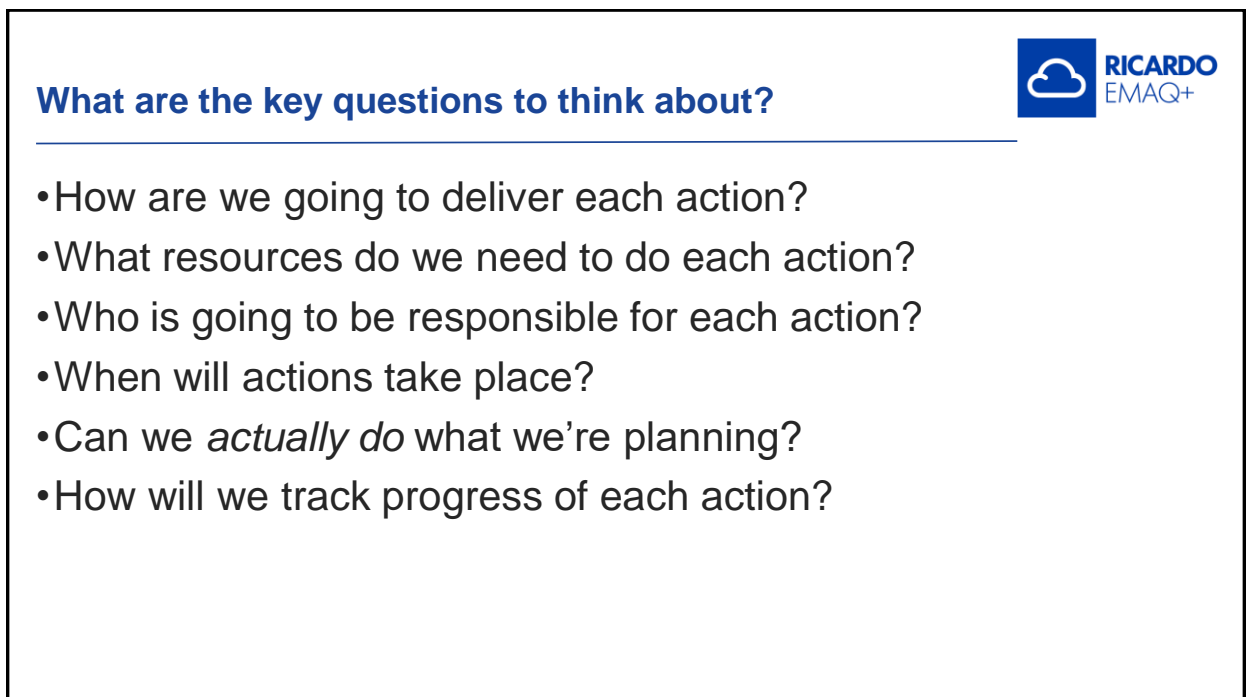
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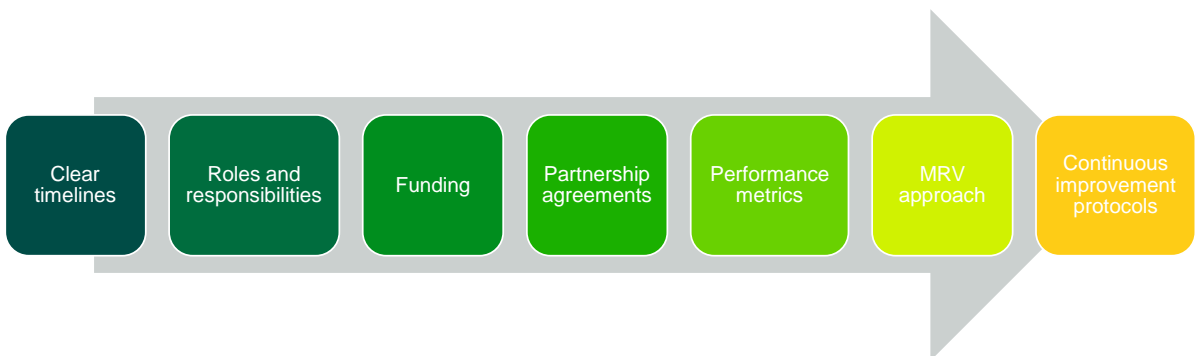
What is an implementation plan?



The steps required to carry out an action including identifying the tools, resources, guidance, and procedures needed, as well as establishing timelines for implementation and tracking progress

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The implementation plan should achieve:



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Heat decarbonisation planning

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Heat decarbonisation

- Heat networks
- Non-domestic
- Domestic

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Heat networks



- Will district heating be an option?
- If available – what benefit to you?
- Need to develop counterfactual option
- Compare lifetime cost of options in Technoeconomic Model (TEM)

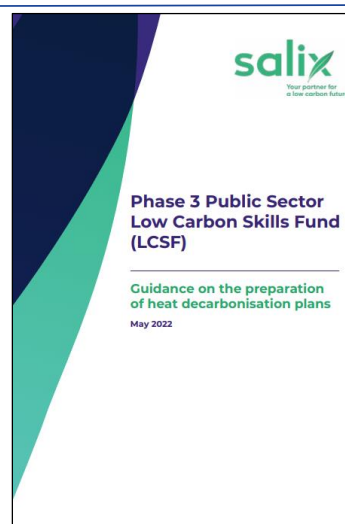


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Non-domestic heat decarbonisation



- Prepare heat decarbonisation plan (HDP)
 - A clear plan with sequence of measures
 - Sets out justification for chosen pathway
 - Useful for funding applications – more use to you



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Non-domestic heat decarbonisation



- Understand your estate
 - Long-term usage plans
- Reliable data
 - Energy data
 - Site plans

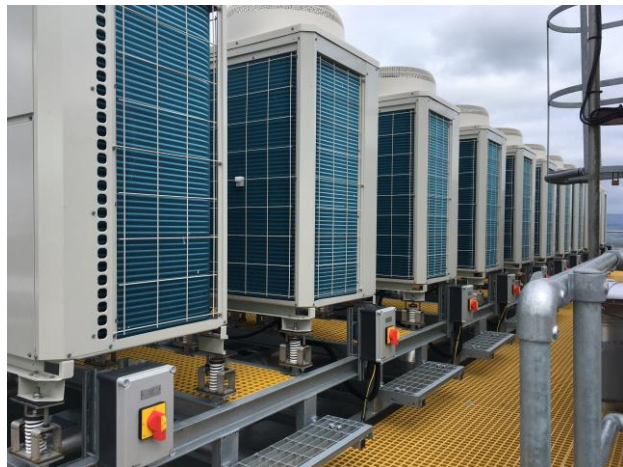


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Non-domestic heat decarbonisation



- Heat pumps and flow temperature trade-offs
- Role of fabric
- Grid issues



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Non-domestic heat decarbonisation



- Technoeconomic model (TEM) important
 - Compare lifetime cost of options
 - Needs accurate estimates costs and timescales
 - Particularly important for complex sites



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Domestic heat decarbonisation



- Two interlinked issues:
 - **Decarbonising heat**
 - **Alleviating fuel poverty**
- Low carbon technologies can cost more to run
- Insulation reduces costs – is capital intensive
- A property specific approach is required



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Domestic heat decarbonisation



- **Low carbon technologies**
 - Heat pumps – usually default option
 - Electric heating
 - District heating (where available and suitable)
- **Heat pump constraints**
 - Heat emitter replacement
 - Insulation often not essential for this purpose – can help running costs
 - Needs hot water cylinder
- **Whole building approach**
 - Not the same as always deep retrofit



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Fuel poverty



- **Important to consider impact of measures**
 - Electricity prices vs existing fuel
 - Heat tariffs on heat networks
 - How will systems really be used
- **Good advice on how to operate effectively**
- **Role of energy tariffs**
- **Other interventions may be required**
- **Interventions may be different in poorest households**
 - What happens if they don't turn the heating on at all?



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Lessons from PSDS

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Some lessons from PSDS

- **Understand what you are trying to achieve**
 - E.g. a deep retrofit may be exactly what your organisation needs of a building for its use, lifecycle etc.
 - It may not make an optimal funding application – that doesn't mean it isn't worthwhile
- **Simplicity works**
 - The more complex the solution, the harder it is to understand. Sites or organisations with solutions they don't understand have they serve have a lower chance of operating them successfully for its lifetime
 - However, some complexity can be justified to unlock savings. It is still important that it can be understood.
- **It is your journey**
 - Don't be over-reliant on solutions you can't understand yourselves. Can you explain it to someone else? Could you explain it to a new member of your team or a contractor?
 - Sites which are fully involved tend to get better results (e.g. Schools)
 - How does the PSDS funding and your proposed project fit within your journey?

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Some lessons from PSDS



- **Understand the impact on operating costs**

- Gas price to electricity price ratio
- Effect of lower SCOP than anticipated
- Energy efficiency measures can be important to reduce costs - some energy efficiency is good housekeeping – e.g. optimise your controls
- There can be benefits to specific sites of some solutions not PSDS funded – links to points above.

- **Consider your electricity sources**

- Where does your electricity come from?
 - PV
 - Power purchase & Time of use tariffs
- Is your system optimised to minimise its cost.
- If it isn't now, could it be in the future?

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Q&A

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Thank you!

