6th International Conference on Smart Energy Systems
6-7 October 2020
#SESAAU2020

Exploring 5th Generation Integrated energy systems: project GreenSCIES

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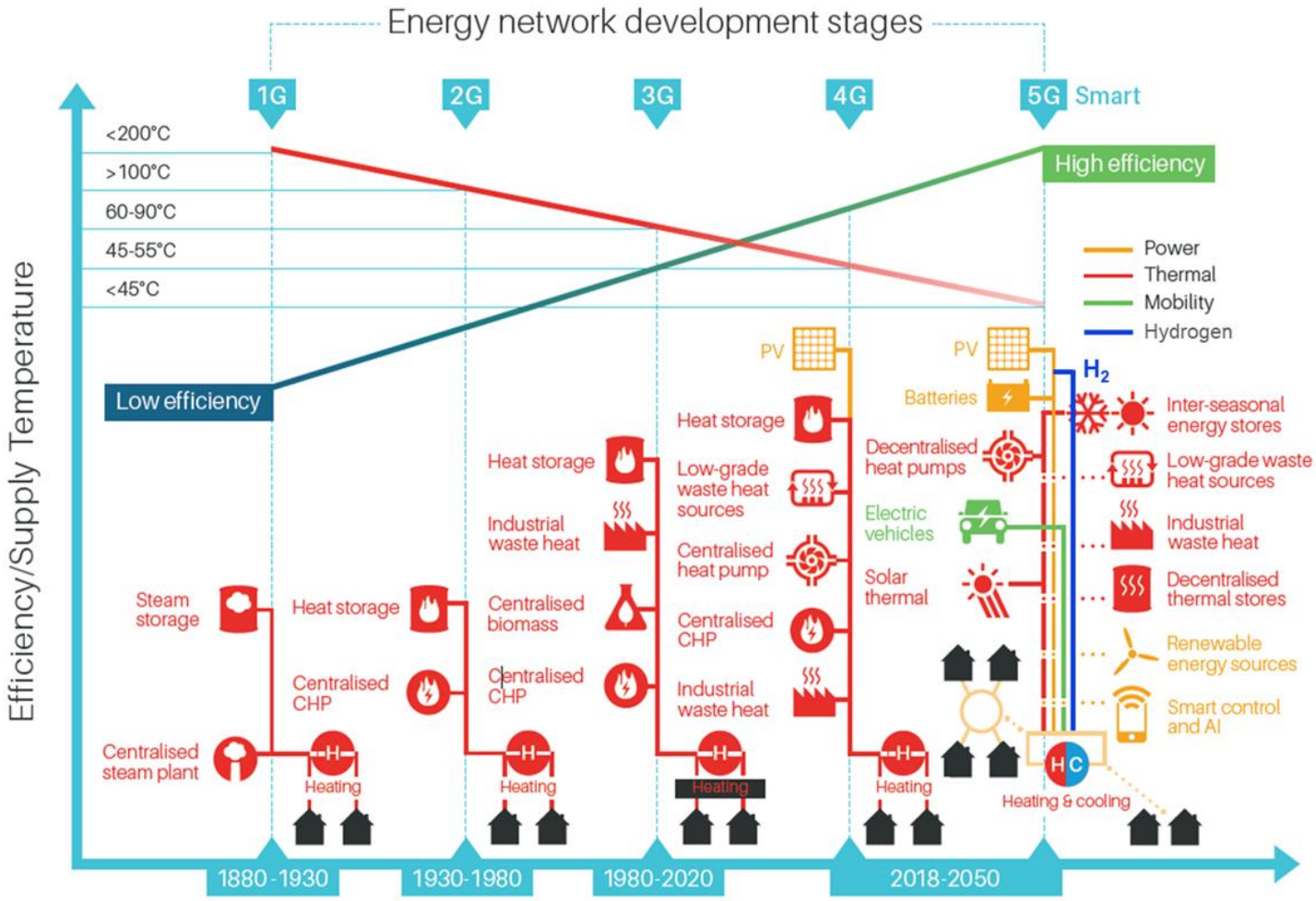
Agenda

- 5th generation (5G) energy network concept
- 5G network design in London: Project GreenSCIES
- Design approach
- Key challenges
- Conclusions

5G concept



Adapted from Lund et.al. 2014

5G concept in London: Project GreenSCIES

- A ground-breaking project for a unique, investable smart local energy system integrating low carbon heat, power and mobility
- GreenSCIES 1 feasibility study (1st of March 2019 – 6 months)
- GreenSCIES 2 detailed design (1st of March 2020 – 24 months)
- Developing innovative technical and business approaches that will significantly reduce carbon emissions, consumer bills and local pollution
- A community-based project with wide stakeholder engagement including local residents, businesses and policymakers
- Focus on the London Borough of Islington with a clear path for replication elsewhere in the UK
- Funded by Innovate UK, part of UK Research and Innovation through the Government's Industrial Strategy Challenge Fund on Prospering From the Energy Revolution *(UKRI, 2019)*

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Our Team

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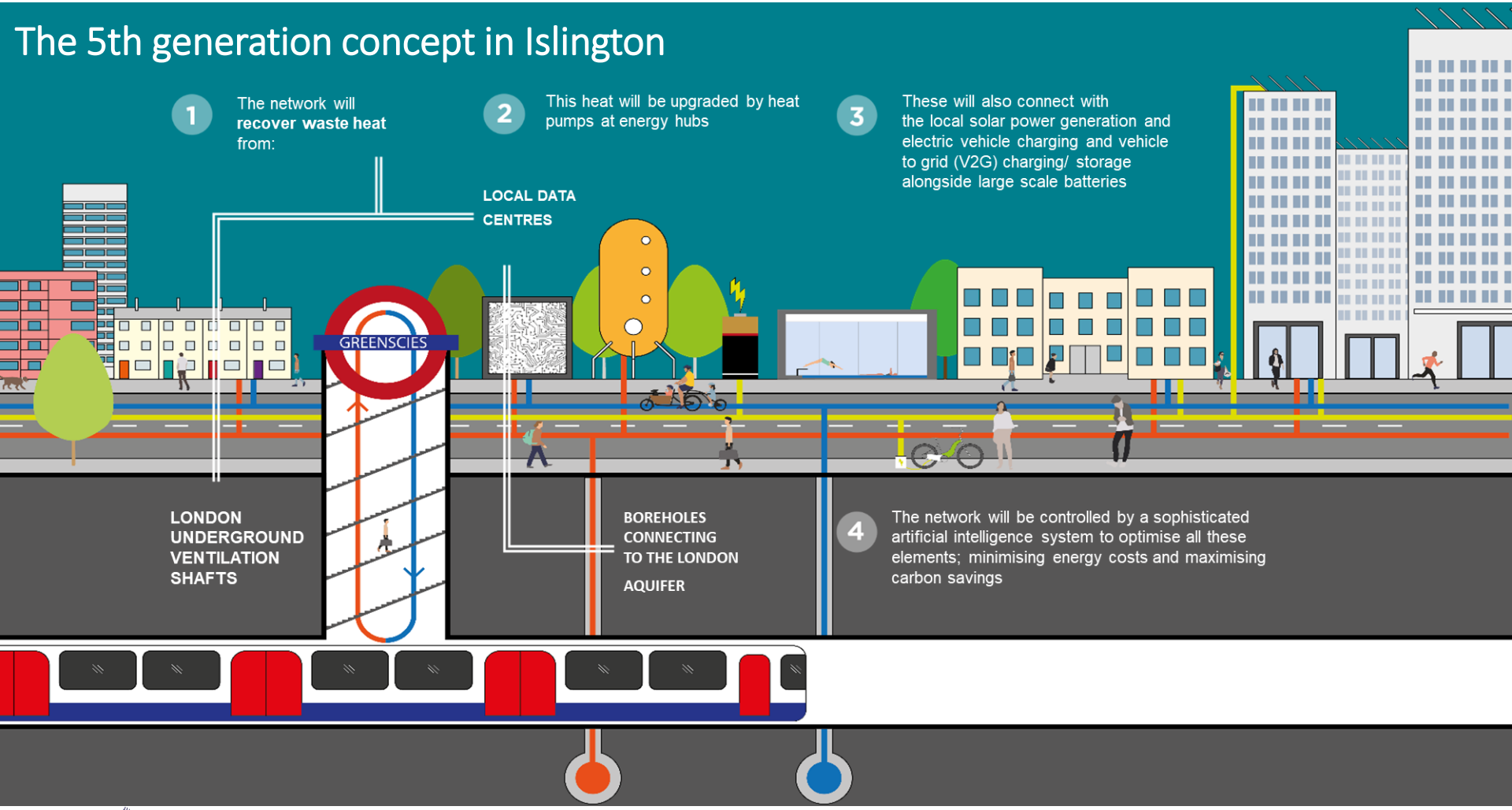

Our priorities

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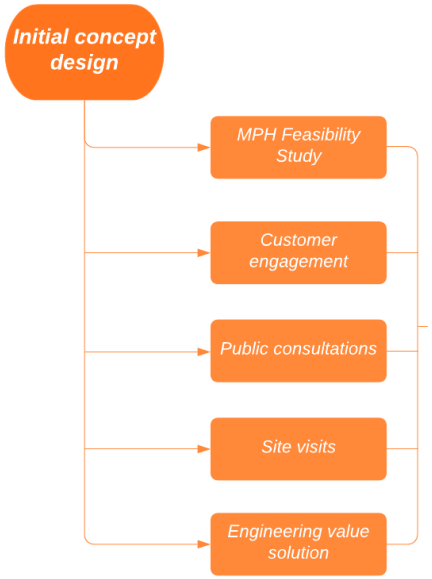
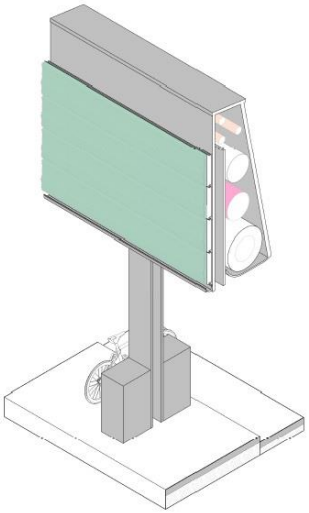
Design approach



EXAMPLES OF BENCHES IN RAISED BEDS

EXAMPLES OF CONCRETE TROUGH PLANTERS



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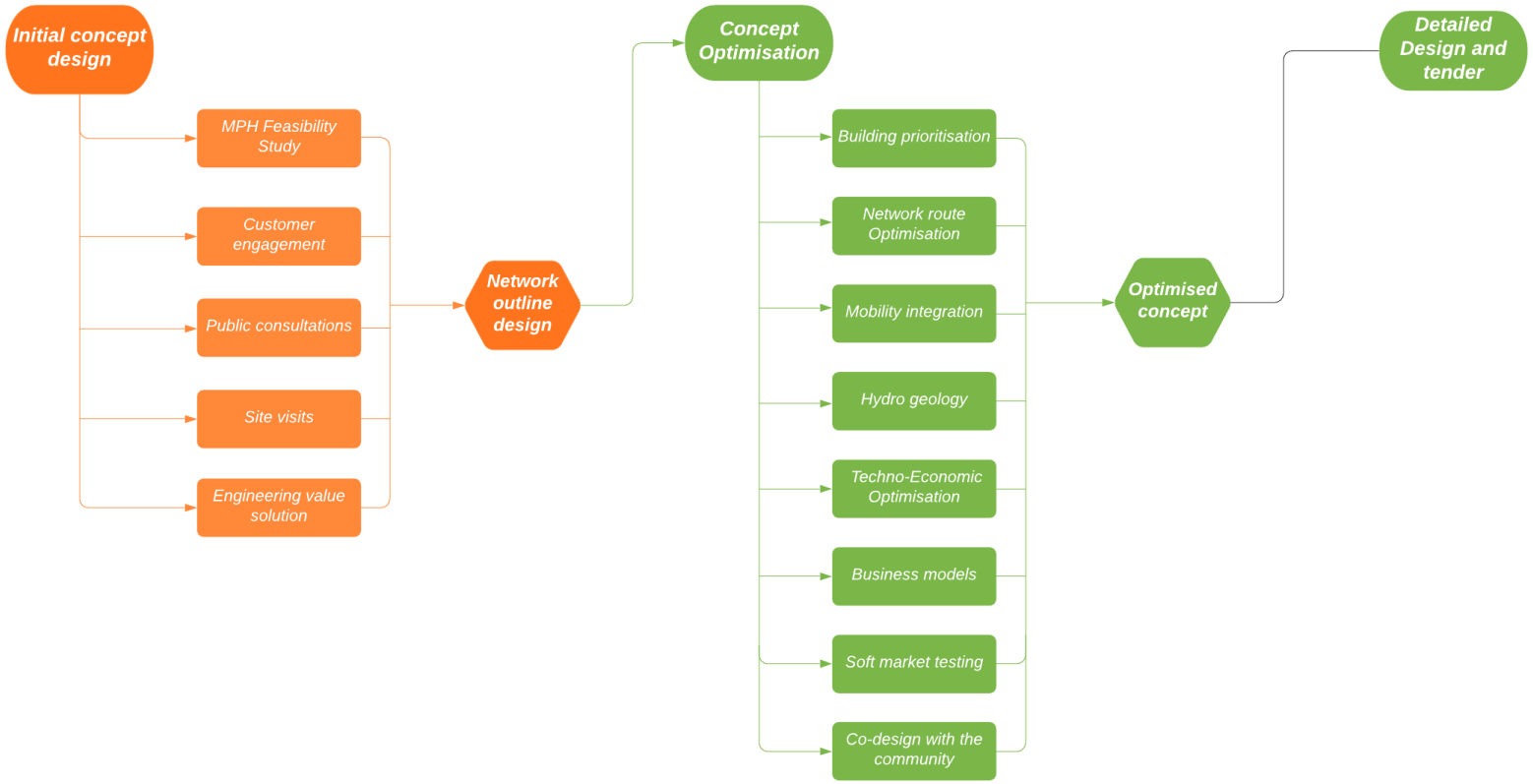
Approach



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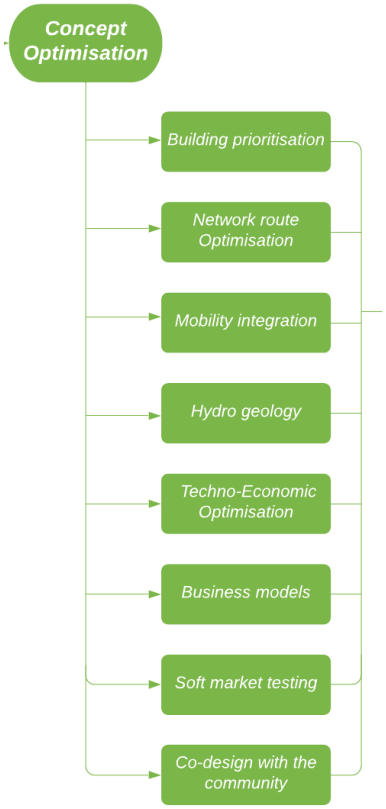
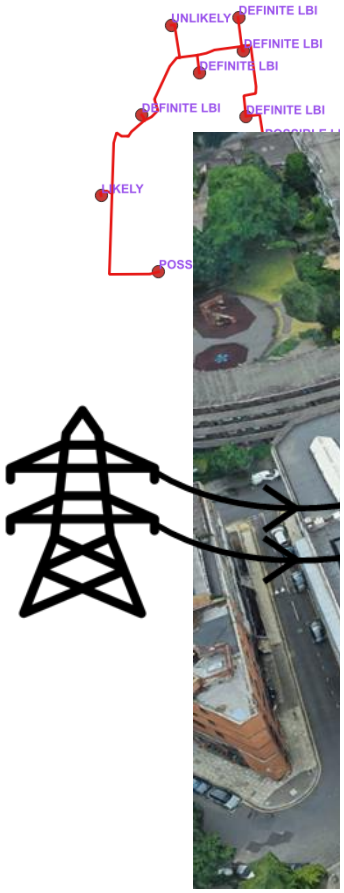
Approach





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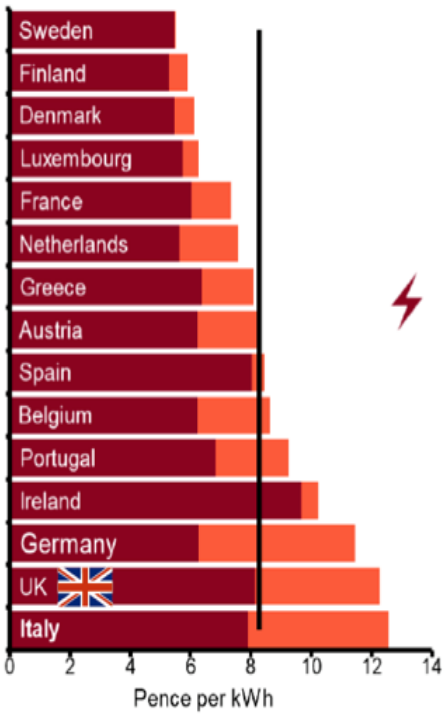
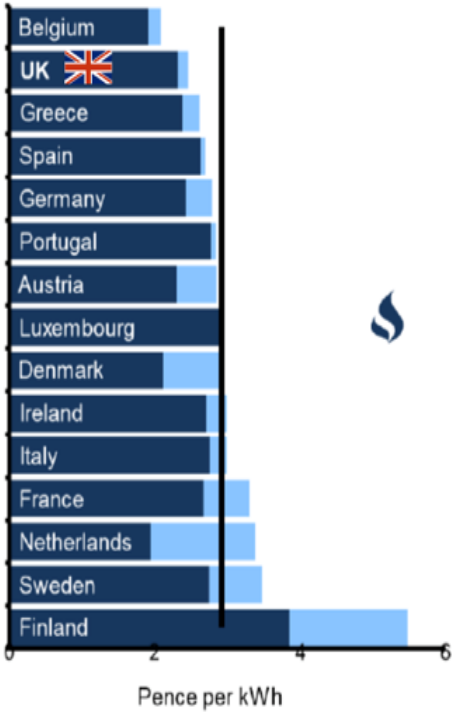
Key challanges





- High electricity costs due to decarbonisation levies
- Gas cheap due to provide affordable warmth
- GreenSCIES 1 we knew RHI was coming to end April 2021/2
- Nobody expected proposed replacement would be NOTHING AT ALL
- Challenging to make the scheme economic

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Conclusions

- 5th generation integrated Mobility/Power/Heat scheme(s)
- Feasibility completed and detailed design underway for GreenSCIES
- The route to near net zero that could be achieved by the GreenSCIES concept
- Highly cost sensitive (due to the loss of RHI)
- Innovative solutions are being developed to improve economics, social and environmental benefits

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Questions?

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