

# Energy Networks for the Future

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- Policy Context and Priorities
- an Early Project Example of Shared Planning
- Investment 'Ahead of Need'
- Current Investment live Project Examples
- Lessons Learned



# Policy Context

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- Previous Carbon Targets - 40% 2030
- Current Carbon Targets - net zero carbon 2030
  - ❖ City
  - ❖ City Region
- Mandatory Clean Air Plans - compliance by 2022
  - ❖ City
  - ❖ City Region
- Economic Development Plans and Trajectories



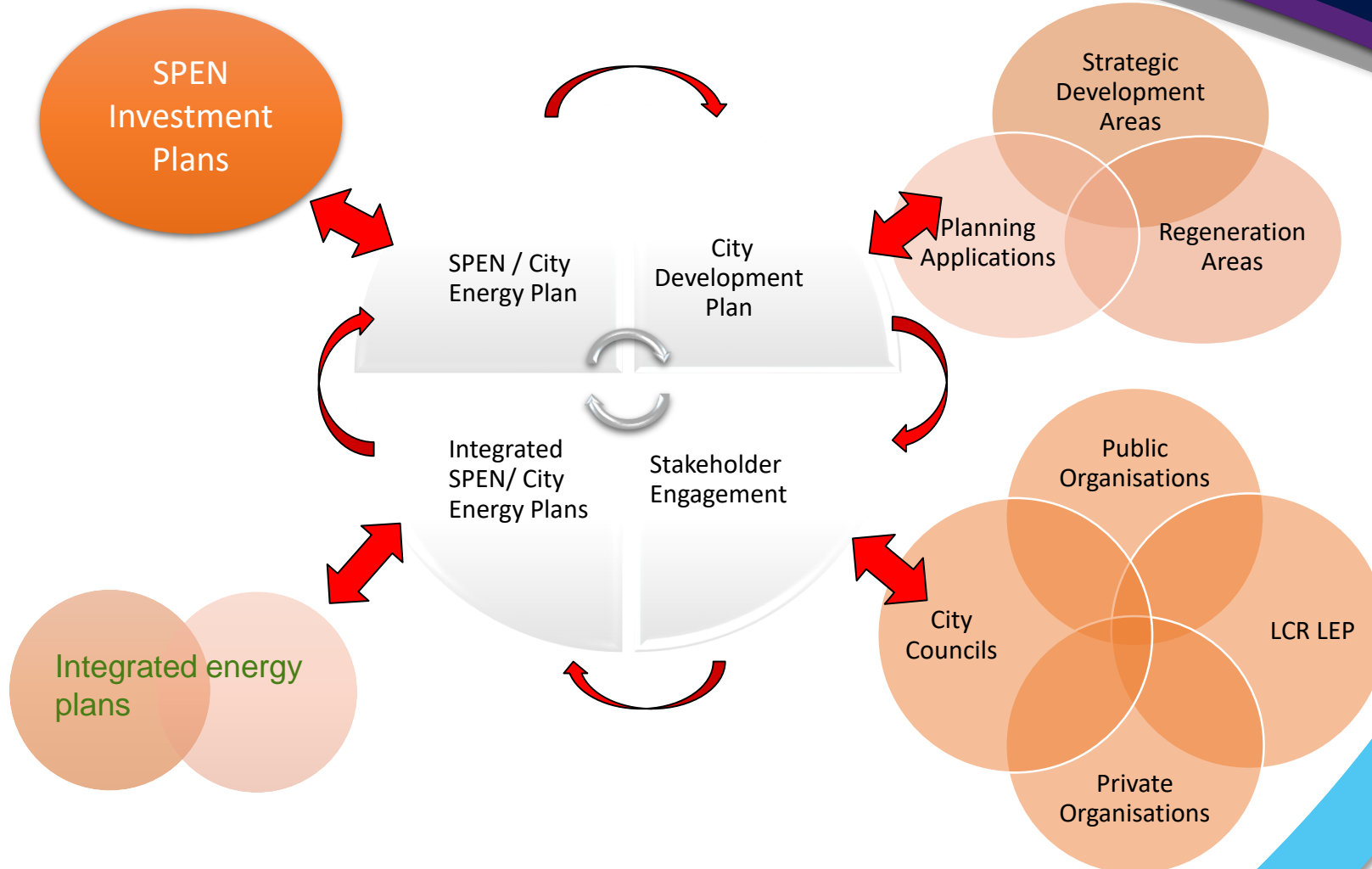
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# Project Example - Integrated Energy Planning

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## An Early Approach with SPEN



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# Integrated Energy Planning

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## The Approach with SPEN

### Data Sources

- Planning applications, Housing land audits (SHLAA), Commercial and Industrial development approvals.
- SP Energy Networks connection requests.
- SP Energy Networks network capacities
- Changing demand trends – E.g. Heat pumps & electric vehicles.



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# Liverpool City Council - Historical Planning Data

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- LCC annually collect “Planning Permission” progress data.
  - ❖ Approx 80% of Planning Applications are approved
  - ❖ Approx 70% of Planning Permissions are implemented

(Numbers are based on applications producing a significant network load.)



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# Local Development Plans & Planning Applications

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5 Mayoral Development Zones

312 Planning Applications

12 New Schools

19 Strategic Investment Framework (SIF) Projects

2 Enterprise Zones

200 MW Total Estimated Peak Load From Planning Applications

## Planning Applications

- Planning Application - City Centre
- Planning Application - Suburbs
- Future New School Sites

## SEAP

- Project Locations

## SIF

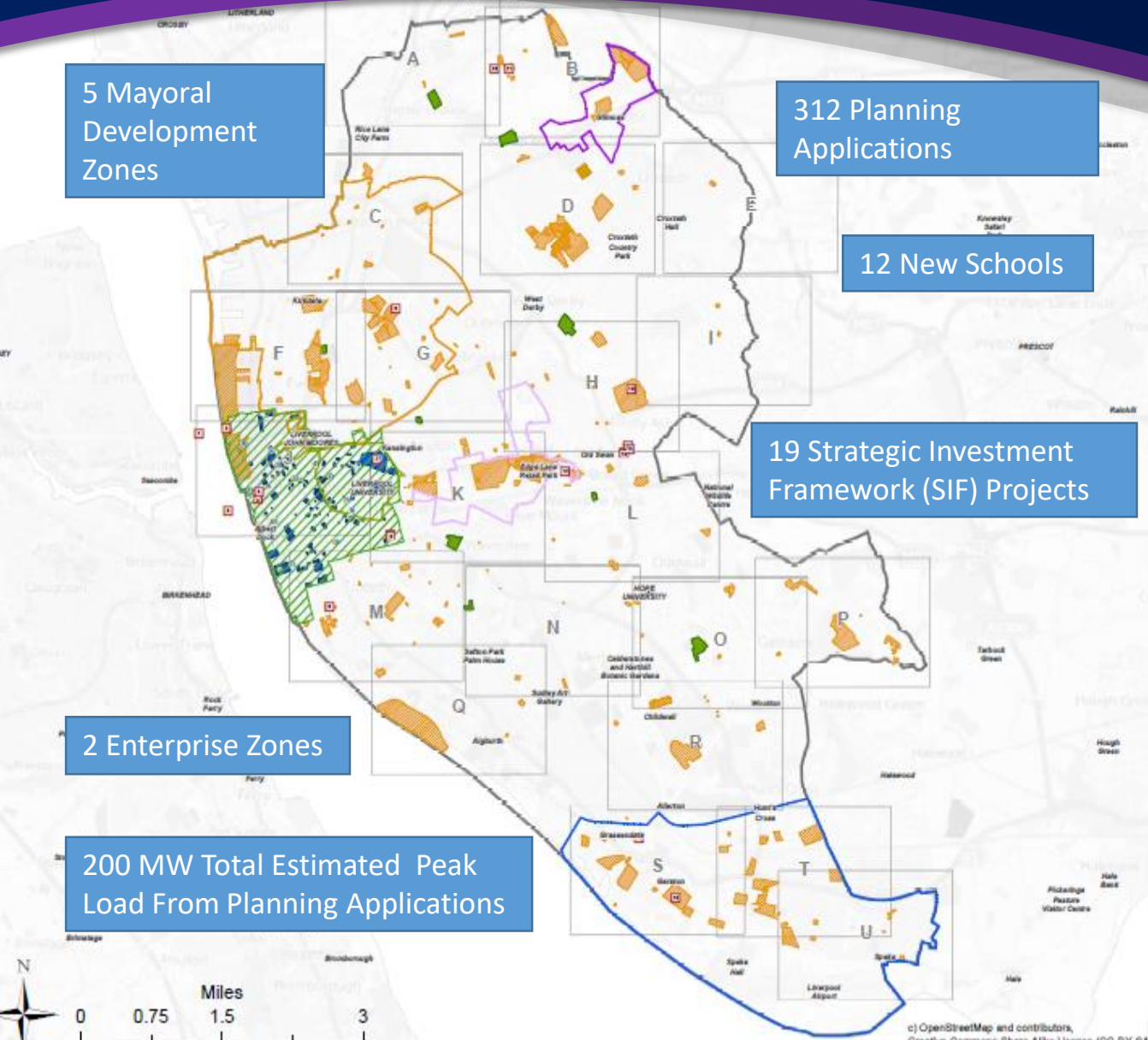
- Project Locations
- ▨ SIF City Centre

## Mayoral Development Zones

- Central Liverpool
- City Centre East
- North Liverpool
- South Liverpool
- Stonebridge Cross

## Enterprise Zones

- Liverpool City Enterprise Zone
- Liverpool Waters
- Liverpool City Boundary

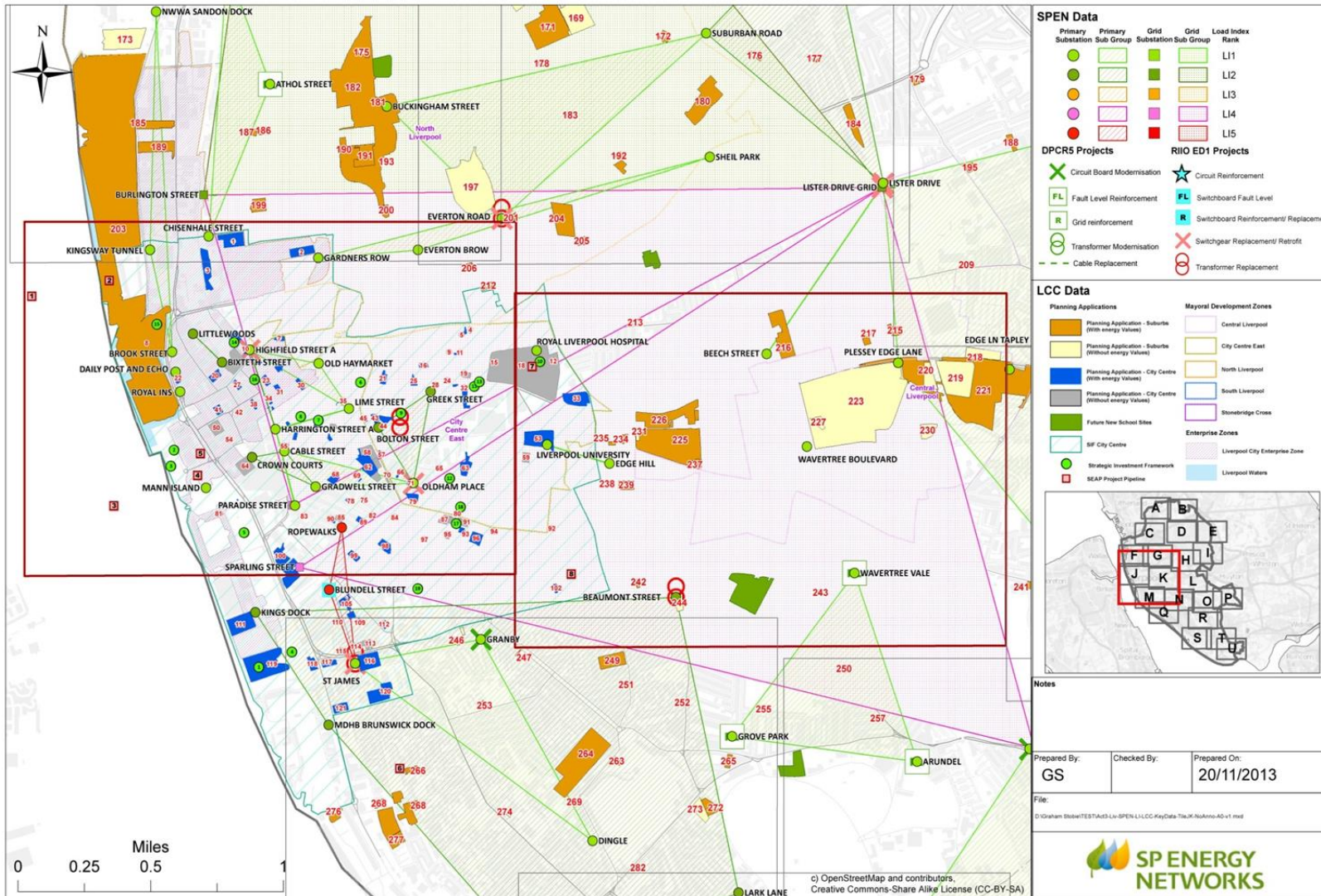


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## Liverpool City - Tiles J & K - SPEN LI & Primary Projects, LCC Planning Applications and Development Zones





# Baltic Triangle Case Study -evidence

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Identified as a new Cultural Quarter in City's 2009 Development Plan

Historic warehouses cut across 1960's industrial units

Live music venues, unique bars & restaurants

Home to city's creative industries

Adjacent to City Centre , close to Liverpool Waterfront and the Albert Dock



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# 2013 Planning Applications - Estimated Load Analysis

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Liverpool Central Area of Interest		
Total Planning Applications in CAOI	119	
Estimated Existing Load for Planning Applications	66.8 MW	
Student Housing variations (electrically heated or non-electrically heated)	Figures for 6kW per room	Figures for 1kW per room
Estimated Peak Load	96.8 MW	59.9 MW
<b>Estimated Net New Load</b> (taking into account brownfields sites and demolition of some existing buildings)	<b>65.1 MW</b>	<b>28.2 MW</b>



# Baltic Triangle Case Study

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Planned developments at the Baltic Triangle & Ropewalks area of the City of Liverpool have been identified as:

86 Planned Developments delivering the following outputs:

- Residential 24,000m<sup>2</sup>
- Hotel 32,000m<sup>2</sup>
- Retail 14,500m<sup>2</sup>
- Office Space 4,500m<sup>2</sup>
  
- Total cost estimate £85m

Source: LCC



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# Baltic Triangle Case Study – Estimated New Load

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Category Description	No. of Consented Planning Applications	Estimated New Load from Planning Applications (using ESD0-04-003 Issue 2 and 4) (kVA)	Estimated Net New Load (taking into account any existing load for each development site) (kVA)
Housing/Apartments/Residential Units/Student Accommodation	25	14,063	11,903
Hotels	14	5,840	4,666
Retail/Leisure	13	5,034	4,464
Employment Space/Office/Non-Residential/Other	10	3,710	3,686
Mixed Developments	24	13,304	9,139
<b>Totals</b>	<b>86</b>	<b>41,951</b>	<b>33,858</b>

Not all Planning Applications actually result in completed development. Historical analysis of Liverpool CC Planning Permission completions since 2002 has produced a completion rate of 70%. Therefore we have applied the 70% completion rate factor to the net new load.

**Total Estimated Net New Load**

**23.7 MW**

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# Joint Planning Issues

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## Manual Data Collection is not Sustainable

- Timescales
  - ❖ Takes months – data constantly changing
- Resource Availability
  - ❖ Council cuts – resource may not be available in future or required expertise available e.g. GIS.
- **Need**
  - **an automated process**
  - **a business need for utilities**
  - **now to be beyond BaU**



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# Investment ahead of need

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- What degree of risk is acceptable
- How can the DNO financial model change
- The spectre of a 'stranded asset'
- Funding readily available v funding not available



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# Positive Current Joint Plans

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- Infrastructure alternative fuel plans LCR
- DSO approach and costings (Baltic)
- Resourcing
- Project facilitation Heat Networks (2) Smart Grid city centre trial, EV Project Charge, Tidal energy and storage, Hydrogen supply and storage

But BaU will not deliver zero carbon



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# Barriers -Implementation of Joint Plans

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- A shared language and understanding
- Understanding Geographies
- Understanding Governance structures
- Role of Ofgem
- Relaxing vertical integration restriction (?)
- Ensuring equity across UK countries



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# Outcomes Needed

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- Cost Effective Utilities to support our Clean Growth
- Low Carbon Utilities to support Zero Carbon
- Evidenced Local Knowledge
- Evidenced Responsiveness to local need

Delivered with :

- Local Jobs & Skills commitment
- Local Investment commitment
- Fair Costs and Support for Vulnerable Households



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