# Spatial and Temporal Modelling: Commercial landscape (1/2)
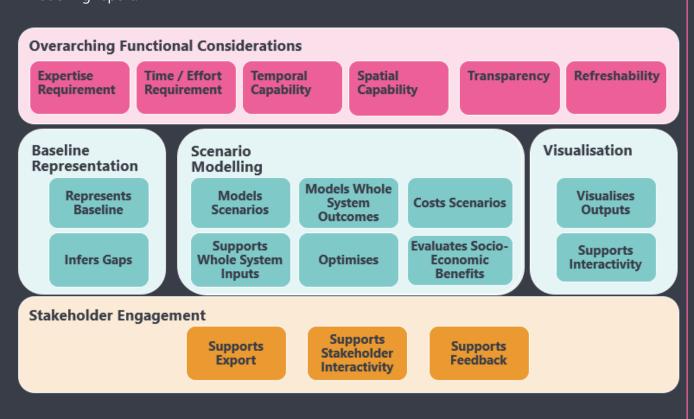
The project aimed to identify the different commercially available tools that can deliver spatial and temporal modelling capabilities. To have a consistent definition of the different capabilities that STeM tools could offer, a functional framework was developed that articulates the main functions offered that could deliver on the needs of local authorities.

## STeM Functional Framework

The proposed functional framework has been defined across 5 functional areas:

1. **Overall functional considerations:** These are overall considerations for tools, the outputs they produce, and the robustness of assumptions made by tools.
2. **Baseline representation:** These functions are used to depict the current energy and social system that exists within a place.
3. **Scenario modeling:** These functions relate to the ability of tools to model and create efficient decarbonisation pathways scenarios based on whole system inputs
4. **Visualisation:** These functions relate to the ability to visualise outputs that can be interacted with by stakeholders.
5. **Stakeholder engagement:** These functions relate to the ability to gather input from other individuals and organisations based on a plan.

Each of these functional areas has a series of functions (Depicted in darker colours on the right). Full descriptions of each of the functions are available on page 40 of the Spatial and Temporal Modelling report.

### Overarching Functional Considerations

- Expertise Requirement
- Time / Effort Requirement
- Temporal Capability
- Spatial Capability
- Transparency
- Refreshability

### Baseline Representation

- Represents Baseline
- Infers Gaps

### Scenario Modelling

- Models Scenarios
- Models Whole System Outcomes
- Costs Scenarios
- Supports Whole System Inputs
- Optimises
- Evaluates Socio-Economic Benefits

### Visualisation

- Visualises Outputs
- Supports Interactivity

### Stakeholder Engagement

- Supports Export
- Supports Stakeholder Interactivity
- Supports Feedback

## STeM Tool short listing and assessment

The summary table below outlines example tools that are currently available in the market that were considered for this project. **To note**, not all tools within each category are equal in terms of capability, output, or robustness. This list is not exhaustive and will evolve over time.

| Name | Owner | Availability* | Skill-level | |
|------|-------|---------------|-------------|---|
| EnergyPath Networks | Energy Systems Catapult | Low | Expert | *Key for Availability: |
| SCATTER | Anthesis and Tyndall Centre | Medium | Non-expert | |
| ARUP Local Area Energy Planning | Arup | Low | Expert | Low: Commercial product/ internal use only |
| City Energy Analyst | ETH Zurich | High | Non-expert | |
| EVCI Framework | Transport for the North | Medium | Expert | |
| City Science | City Science | Low | Expert | |
| Buro Happold Energy Planning | Buro Happold | Low | Expert | Medium: Open but with restrictions |
| Tranzparent | Tranzparent | Low | Non-expert | |
| ClimateView | ClimateView | Low | Non-expert | |
| Compass Engine™ | Slingshot Simulations | Low | Non-expert | High: Open for all |
| LAEP+ | Advanced Infrastructure | Low | Non-expert | |
| IES iCD | IES VE | Low | Non-expert | |
| LOCATE SOLAR | Geospatial Insight | Low | Non-expert | |
| LOCATE EV | Geospatial Insight | Low | Non-expert | |
| Your Local Net Zero Hub | UKPN | Medium | Non-expert | |
| LENZA | SSE | Medium | Non-expert | |
| LHEES NAVI Tool | SP Energy Networks | Medium | Non-expert | |
| NPG Open Data Portal | NPG | Medium | Non-expert | |

Each tool on the short list was scored against the devised functional framework. Whilst many tools scored highly on one or a couple more of the functional areas, no tool scored highly against every area meaning that **currently there is no tool available that meet all the identified STeM needs** of the local authorities/combined authorities/Net Zero Hubs.

## Further research

Several of the most promising vendors were contacted an Expressions of Interest (EOI) to better understand the extent to which they can deliver the STeM capabilities outlined, future roadmaps, and potential costs to inform future business case development.

## Key observations

**Data:**
Tools appeared to be bundled with data. There may be value in a centrally agreed data repository (similar to OS Maps).

**Functional coverage**
A suite of tool offerings of tools is needed to deliver all the capabilities in the framework for different stage of Net Zero journey.

**Use-case specificity:**
Each tool delivers strong capabilities, but in some cases, this was for niche use cases such as forecasting future EVs and charger siting

**Costings:**
There are different cost models including a flat fee, user-based licenses for capabilities, and free access for local authorities for a period.

For more information, please refer to the full report