

OPENGRID PLATFORM COMPONENTS – GUI FOR MODELING

One open platform, powerful interoperable components

OpenGrid's foundation is robust, trusted, open data, with task-ready applications layered on top. Each component was shaped by conversations with the grid planning community and user research on modeling pain points, and each deep-dive sets out what we heard, the outcome we're working toward, and a draft product concept for the community to react to.

Each deep-dive draws on more than 65 conversations with over 55 participants globally across the grid planning ecosystem, conducted in early 2026. We group participants into six personas along two lines: whether they produce analyses or use them, and whether they sit inside or outside the organization whose decisions are at stake. Each group brings different needs, and together they shape how every OpenGrid component is designed. To protect confidentiality, interviewees are identified only by organization type. The draft product concepts are starting points for OpenGrid's Technical Committee and working groups to refine, and we expect scope, priorities, and naming to change as that work happens.

This summary describes the current vision for each component of the OpenGrid Platform. They are not definitive specifications and are still subject to ongoing refinement. Each component will be shaped by the Technical Committee and a working group that is open to anyone who wants to take part. We expect scope, priorities and naming to change as that work happens. Comments, corrections and alternative proposals are welcome. We are publishing at this stage deliberately, so that direction can be shaped in the open rather than presented once it is already fixed.

GUI for Modeling

Pain points, from user research

Open planning tools require scripting, and that single fact limits who can model: smaller utilities, public agencies, and emerging-market planners either skip the analysis or have to outsource modeling.

What we heard

- One European TSO said open source requires Python or Julia while licensed tools offer drag-and-drop, and another said learning its commercial tool was easy because of a good GUI.
- A US municipal utility said most colleagues at other utilities are still pointing-and-clicking or using Excel. New tools have high startup costs, and users need more "easy button" options and toy examples.
- A US national lab found most state energy agency staff are policy-oriented, often training on personal laptops because institutions lack infrastructure. Users need conceptual frameworks and semantics ("portfolio" vs. "scenario") as well as software.
- An independent consultancy said regulators are held back by limited modeling backgrounds, staff turnover, and anxiety about tool complexity. An interface helps most when it comes with onboarding and hands-on support.
- A US state PUC interviewee wants a chatbot for workflow assistance because they use the tools once a year and forget how.
- A South Asian think tank said non-coders favor a GUI-based scenario tool for its interface and speed, even though it cannot easily add or remove power plants.

What users asked for

- A US municipal utility wants browser-based interfaces with simple sliders for fast scenario exploration.
- A US national lab and an independent consultancy both stressed onboarding, documentation, and conceptual frameworks alongside any interface.

- A US state PUC interviewee wants natural-language help for infrequent users.
- An open energy data provider is working to lower technical barriers, such as the command line, for time-constrained regulatory staff.

Vision

Serious planning analysis is within reach of people who don't write code, without hiding what the model is doing.

A regulator, a state energy office, a small utility, or a civil society group can set up a scenario, inspect its inputs, run it, and understand the result without writing code or hiring a consultant every cycle. Someone who models once a year can pick up where they left off. People work through whatever suits them, whether a visual interface, a plain-language conversation, or code, and can move between them.

Ease of use never comes at the cost of transparency. Interfaces show the data, assumptions, and logic behind a result, so users build real understanding of how a result was reached. Transmission engineers, analysts, investors, and members of the public each get views suited to the decisions in front of them, and organizations can tailor interfaces to how they work.

Draft product concept (for discussion)

The GUI for Modeling turns the rest of the stack into a workspace someone can use without writing code. From one environment, a user connects to data in the Data Hub, builds and configures a model on a visual canvas, launches a run through the orchestration engine, watches it execute, and inspects enough of the result to interpret it. Templates and wizards cover common analyses such as power flow and hosting capacity, so a new team is productive without first standing up scripting expertise.

The longer-term ambition could have two additional shapes: a complete package someone downloads and runs, and building blocks organizations can assemble into interfaces for their own users, since a transmission modeler, a regulator, an investor, and a member of the public do not need the same one. Natural language is a first-class alternative front end.

Boundaries. The GUI invokes the solver but does not own it, and it shows enough to interpret a run while leaving rich results work to Output Visualization.

Who We Heard From

Our platform components were shaped by more than 65 conversations with over 55 participants across the grid planning ecosystem. We group them into six personas along two lines: whether they produce analyses or use them, and whether they sit inside or outside the organization whose decisions are at stake.

Producer Side — People Who Run the Models

Transmission-System Users. Engineers and planners at ISOs, RTOs, TSOs and vertically integrated utilities who model the bulk system, often chaining three to five specialized tools through a single study.

Primary Distribution-System Users. Operators and modelers of distribution networks, from Europe's largest DSOs to small municipal utilities with one- to five-person teams.

Point-Source Modelers. Developers, hyperscaler procurement teams and community energy buyers who model a single point of grid interaction, with analyses that must be defensible enough to underwrite capital commitments.

Consumer Side — People Who Use the Results

Internal Decisionmakers. People who use model outputs to allocate their own organization's capital and must trust analysis they did not run.

External Evaluators. Regulators, intervenors, advocacy organizations, think tanks and data-infrastructure bodies who use outputs to scrutinize decisions made by better-resourced entities.

Straddling Both

External Primary Modelers. Analysts at public utility commissions, reliability councils, think tanks and capacity-building organizations who run their own models to examine decisions made by others.