

OPENGRID PLATFORM COMPONENTS – APIS & INTEGRATIONS

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.

APIs & Integrations

Pain points, from user research

Planning information still moves as documents, spreadsheets, and one-off scripts, so connecting any two tools or data sources means writing bespoke code. Interviewees rarely asked for it by name, since most describe their needs in terms of tools and data. The need shows up in their workflows: information arrives as documents to be retyped, and each consumer asks for a different format.

What we heard

- A European TSO consumes policy data by reading documents and manually translating it into scenarios. Its dream state is load and generation scenarios, at the right granularity and based on policy, available via API.
- A global energy data NGO said finance users want technical integrations such as APIs, but each bank asks for a different format.
- A European flexibility aggregator named a UK DSO's data portal as best practice: half-hourly historical data, annual load forecasts, and API access.
- A California CCA called tracking transmission projects and constraints from ISO PDFs and Excel files, without modeling files, "an impossible task."
- A US university said reliable API access is essential for large weather datasets, which are too big to download whole.
- A US state PUC called AI integration the most compelling new argument for open source, because the code base is accessible to AI agents in a way proprietary tools are not.

What users asked for

- A European TSO wants scenarios and policy-derived inputs delivered by API.
- A global energy data NGO wants one stable interface that serves every consumer.
- A US university needs programmatic access to data too large to download whole.

Vision

Everything in the OpenGrid ecosystem can be reached from the tools, scripts, and AI agents people already use.

Data, models, and workflows can be discovered and used programmatically, from a notebook, a commercial planning tool, an investor's analytics platform, or an AI agent, without knowing in advance where everything lives. Planning information that is typically retyped by hand from documents today, such as policy targets, load forecasts, and scenarios, is available in a form that flows straight into analysis. Interfaces are stable and well documented, so what people build on them keeps working as the ecosystem grows.

Integration becomes routine plumbing, and OpenGrid shows up inside the workflows people already have.

Draft product concept (for discussion)

APIs & Integrations make the OpenGrid ecosystem reachable. The principle is parity: every action a person can take through a GUI, such as searching, exploring, or downloading, has a machine-callable equivalent. It could come in three forms:

1. **An API** that exposes what data exists, where it lives, and how to reach it.
2. **SDKs** in Python, Julia, and potentially other languages that wrap the API in idioms native to each language while emitting the same underlying workflow specification, so a workflow written in one language runs unchanged in another.
3. **An agent interface**, such as an MCP server, that lets AI agents query the registry and draft data transformation plans in natural language.

Data would not flow through the API if it is reliably stored externally. It hands back a pointer or redirect and the client reads directly from storage; a slice request returns only the piece needed, so pulling one month from a large dataset moves only megabytes. Access should also scale and behave consistently across sources, so scripts and AI agents can draw on many datasets without hitting a different rate limit and set of conventions at each one.

Boundaries. This component exposes OpenGrid's own products programmatically. Connecting third-party and commercial tools is Model Plugins.

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.