



The Two-Grid Energy Plan Stress Test

A practical framework for testing an energy proposal before recommending, approving, or funding it

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How to use this handout

Start with the situation and proposed project. Record the evidence, identify what must still be verified, test the assumptions, compare alternatives, and document the conditions required before commitment.

THE PHYSICAL GRID

What can be generated and delivered, where and when.

THE FINANCIAL GRID

What is paid and who bears cost and risk.

Starting point: organization, issue, and proposal

Establish the situation before testing the physical and financial assumptions.

ORGANIZATION AND FACILITY

DECISION DATE

BUSINESS PROBLEM OR OBJECTIVE

PROPOSED PROJECT OR DECISION

SITE, LOAD, AND TIME HORIZON

WHY THE PROPOSAL INITIALLY APPEARS SOUND

Working principle

A sound recommendation must remain workable under the physical system's constraints and the financial arrangements that allocate cost and risk.

Stress Test: Physical and Financial Feasibility

Record the current evidence, then identify what must be verified before a decision.



01 Physical feasibility

- Required load, location, and timing
- Existing service and available capacity
- Interconnection studies and upgrade requirements
- Transmission or distribution constraints
- Reliability, curtailment, and outage exposure
- External dependencies and decision deadlines

WHAT WE KNOW

WHAT WE STILL NEED TO VERIFY

02 Financial feasibility

- Contract price and settlement structure
- Continuing tariff, demand, and capacity charges
- Interconnection and facility-upgrade costs
- Congestion, basis, and market-price exposure
- Resilience, backup, and contingency costs
- Escalation, contract term, and exit provisions

WHAT WE KNOW

WHAT WE STILL NEED TO VERIFY

Stress Test: Assumptions and Risk Allocation

Test what could change, then identify who controls and bears each material risk.



03 Assumption register

ASSUMPTION	CURRENT EVIDENCE	WHAT COULD CHANGE?	EFFECT ON RECOMMENDATION
Load and timing			
Physical delivery			
Price and tariff			
Contract terms			
Regulation and market rules			

04 Risk allocation and response

For each risk, identify who controls it, who bears the consequence, and the available response.

RISK	WHO CONTROLS?	WHO BEARS IT?	RESPONSE OR MITIGATION
Price and tariff			
Upgrades and interconnection			
Congestion and basis			
Delay and curtailment			
Outage and reliability			

From Diagnosis to Decision

Compare realistic options, record the conditions for approval, and assign the next actions.



05 Alternatives considered

ALTERNATIVE	WHAT IT SOLVES	REMAINING RISK	EVIDENCE STILL NEEDED

06 Conditions before commitment and contingency

What must be true before approval, and what will the organization do if a critical assumption fails?

07 Responsibility and timing

DECISION OWNER

TARGET DECISION DATE

WHO WILL RESOLVE THE OPEN QUESTIONS?

NEXT REVIEW DATE OR TRIGGER

08 Decision gate

☐ Proceed ☐ Modify ☐ Defer ☐ Investigate further

PREFERRED OPTION, RATIONALE, AND NEXT ACTION

Quick Reference

Use these questions to frame the decision and the definitions to interpret the market discussion.



A Questions before committing to an energy plan

- | | |
|--------------------------------|--|
| 01 Physical feasibility | Can the required power reach the facility when it is needed? |
| 02 Total cost | What determines total cost beyond the quoted energy price? |
| 03 Risk allocation | Who controls each risk, and who bears its consequences? |
| 04 Assumptions | Which assumptions could change the recommendation? |
| 05 Alternatives | What other options solve the objective, and what risks remain? |
| 06 Conditions | What must be true before the organization commits? |

B Key electricity market terms

ISO / RTO

Regional organizations that coordinate grid operations and administer wholesale markets. RTOs generally have broader transmission-planning responsibilities.

Interconnection queue

Process for studying a proposed grid connection and identifying required upgrades, costs, and conditions.

Tariff

Approved rates, rules, and terms governing electric or transmission service.

Load-serving entity

Entity responsible for obtaining electricity for retail customers.

Power purchase agreement

Contract establishing the commercial terms for buying electricity or financially settling against its value.

Renewable energy certificate

Tradable instrument representing the renewable attributes of one megawatt-hour of generation.

Dispatch

Instructions that determine which resources operate and at what output, subject to network and reliability limits.

Capacity market

In some regions, procures future commitments from resources to be available when needed.

Day-ahead market

Schedules and prices electricity for the next operating day.

Real-time market

Adjusts dispatch and prices as actual conditions differ from day-ahead schedules.

Locational marginal price

Wholesale price at a location, reflecting marginal energy, congestion, and losses.

Congestion

Network limits that require redispatch and may produce different wholesale prices across locations.

Basis risk

Risk that prices at two locations, or under two settlement arrangements, do not move together as expected.

Financial transmission right

Financial right tied to a specified difference in congestion prices. It does not provide physical delivery or outage protection.

Ancillary services

Reserves, frequency regulation, and related services that help maintain reliability.



Continue the work with Matt

The worksheet identifies the questions. Understanding Electricity Markets develops the knowledge needed to answer them and advise leadership.

Course information and syllabus