



Mapping Decisions along the Value Chain: Who Gives a Watt?

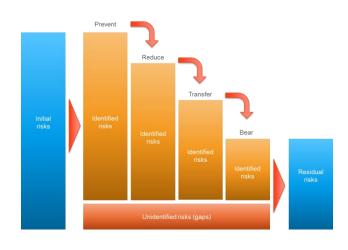
Ulrike Jahn, Fraunhofer CSP / David Moser, Becquerel Institute

Intersolar Europe Conference, 7th May 2025

Why Mapping Decisions and Workflow?



- Identification of decision steps along the value chain with an impact on technical, economic, and financial KPIs
- Visualisation helps in comparing workflows within the sector
- Introduction of quality gates along the workflow
- Assess the impact of digitalisation in PV projects
- Visualise best practices and compare state of the art with progress beyond





→ Key Results: Decision Matrix and Best Practice Flowcharts

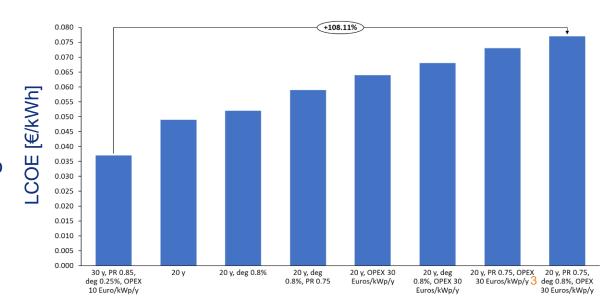
Decision Matrix



- Step 1: Identification of phases and stakeholders involved
- Step 2: For each item identify flow on decisions
- Step 3: Identify KPIs to assess the impact of decisions

Quality related parameters can have a large impact on economic KPIs

Important to map decision to understand where it went wrong and introduce quality gates



Example: SOILING

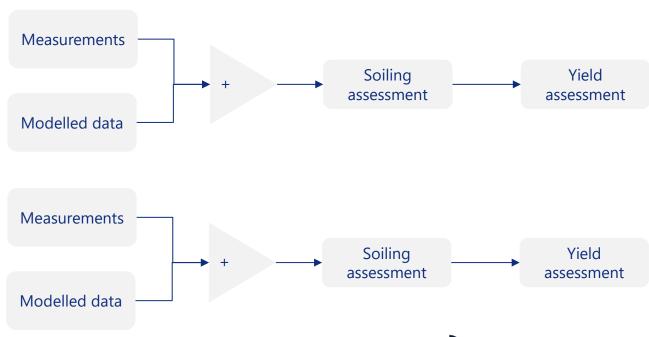
Project Developer

Consultant



Development and Detailled Design

Engineering



ST 3.3 SOILING



Development and Detailled Design **Engineering 0&M** Cleaning strategy Asset Manager Consultant Project Developer **0&M** budget Measurements Modelled data Measurements assessment



ST 3.3 SOILING

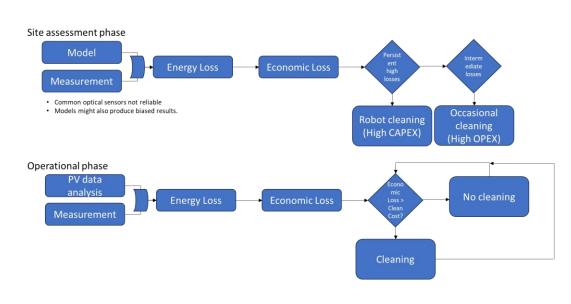


Engineering Development and Detailed Design **0&M** Cleaning strategy **Asset Manager** Consultant Project Developer **0&M** budget Difficult to Measurements meet production Reduced budget Default value / budget target Mødelled data

Other examples

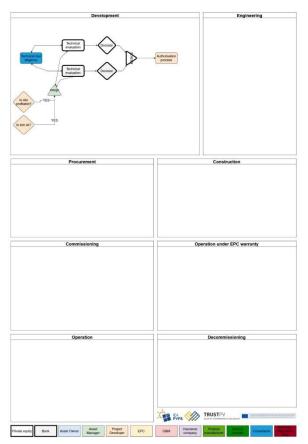


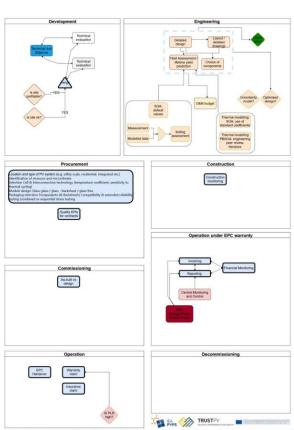
- Solar analytics
- Connectors
- Corrosion
- Unintended shading
- Early design
- Grid connection
- PLR
- Soiling
- Snow
- BOM
- Thermal modelling
- Automated failure detection

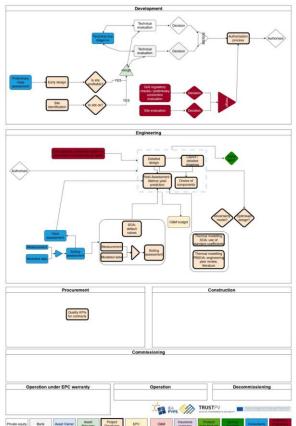


STAKEHOLDER DECISION MATRIX







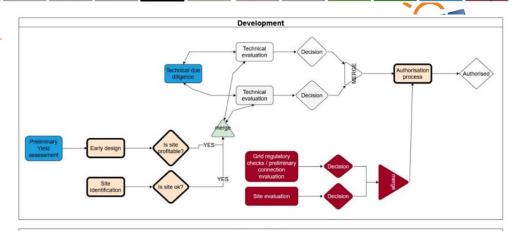


Example: Project developers

 For each stakeholders, direct nearest "neighbour" interactions were mapped along the various phases

This workflow reflects the Project Developer's critical role in:

- Ensuring project viability from a grid connection perspective
- Managing regulatory compliance
- Coordinating between site constraints and grid requirements
- Making key decisions that impact the project's technical and commercial feasibility



08M

company

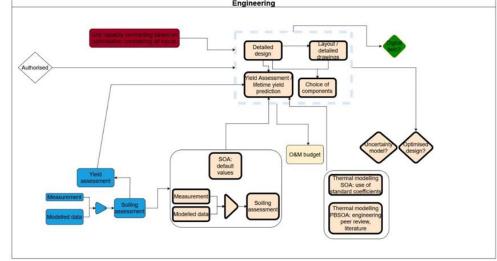
anufacture

Project Developer

EPC

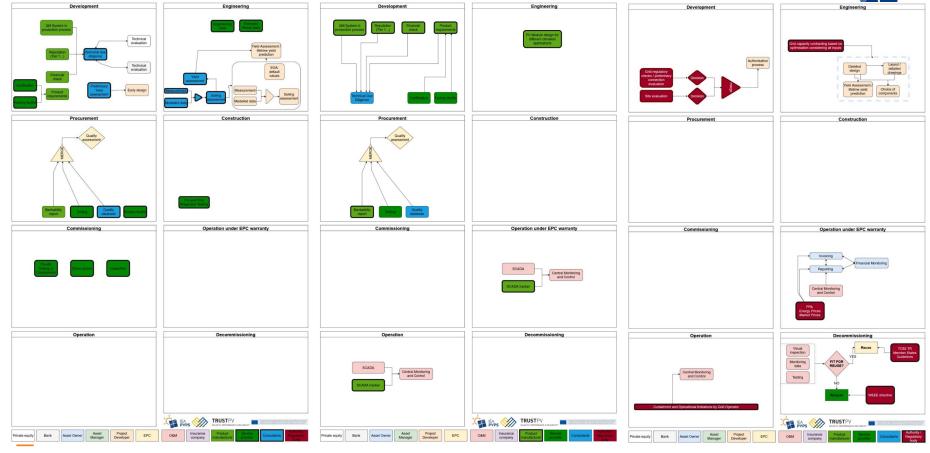
Asset Owner

Manager



DECISION MATRIX

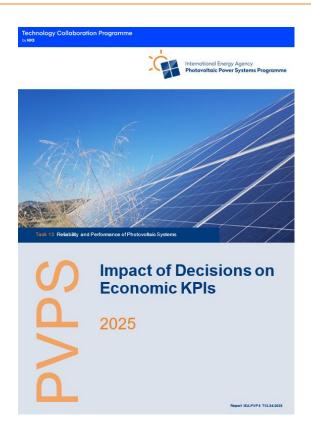




Stakeholders Engagement at SQS 2024 SOLAR QUALITY SUMMIT— EUROPE 2024 2024 7 groups – including 50-60 experts

What's next? 1/2

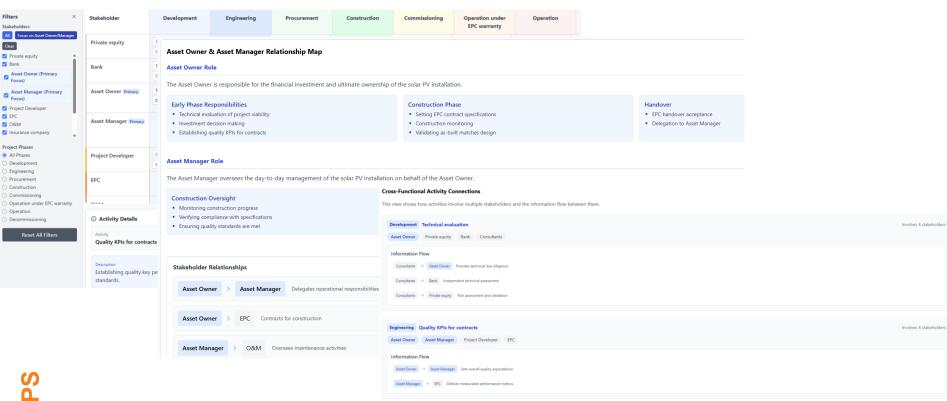




- Definition of Performance and Economic KPIs, mitigation strategies
- Decision Matrix including Quality Gates and for PV Applications.
- Case studies on quality-controlled PV modules, underperforming PV systems, soiling assessment, data-driven corrective and predictive actions, understanding site specific hail actions
- Financial Modelling and Investment decisions for utility-scale PV plants

What's next? 2/2









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Thank you for your attention!

Ulrike Jahn, David Moser & ST3.3 Team

