

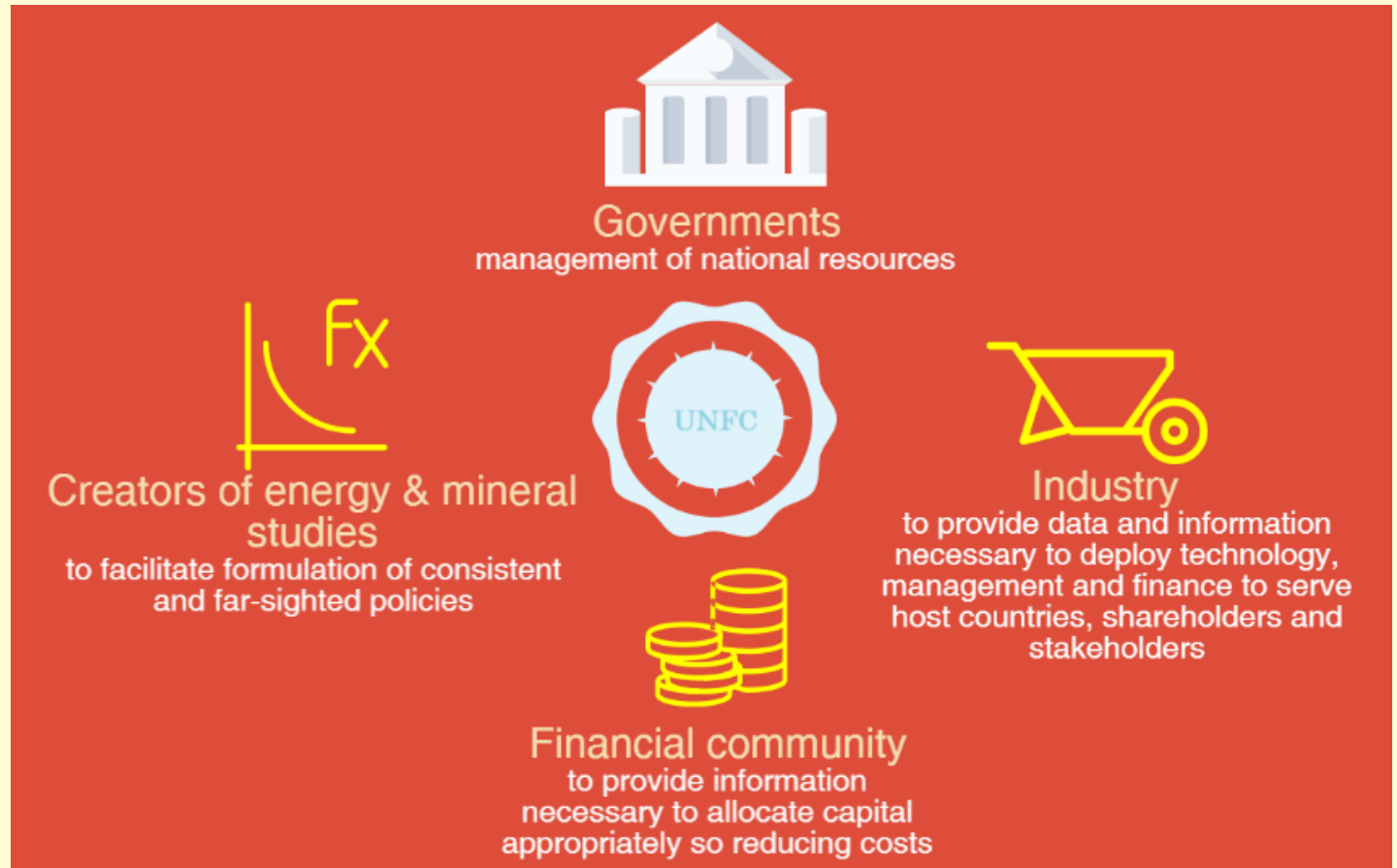
Integrated Resource Project Classification: a Sustainable Approach

Part of the United Nations Resources Management System

David MacDonald

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**Resource
Stakeholders
want consistent
data to make
decisions**



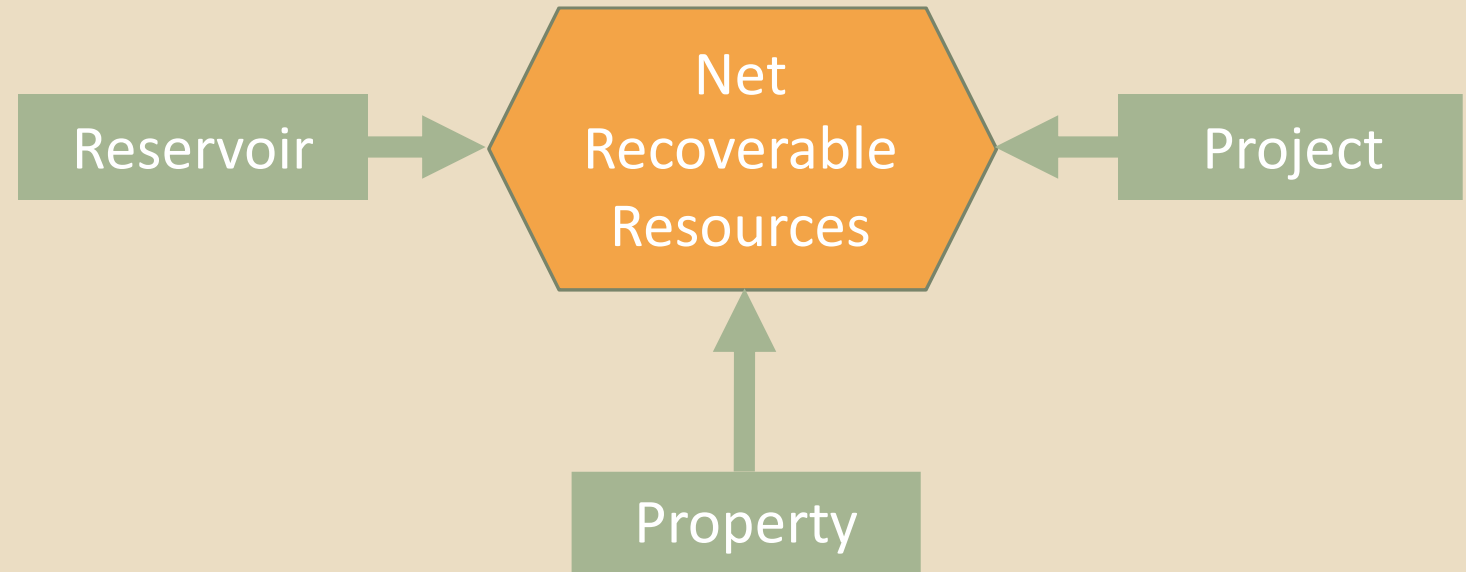
Resource Data Sources

Resource estimation requires three key disciplines:

- Commodity specialists
- Project and facility engineers
- Commercial specialists

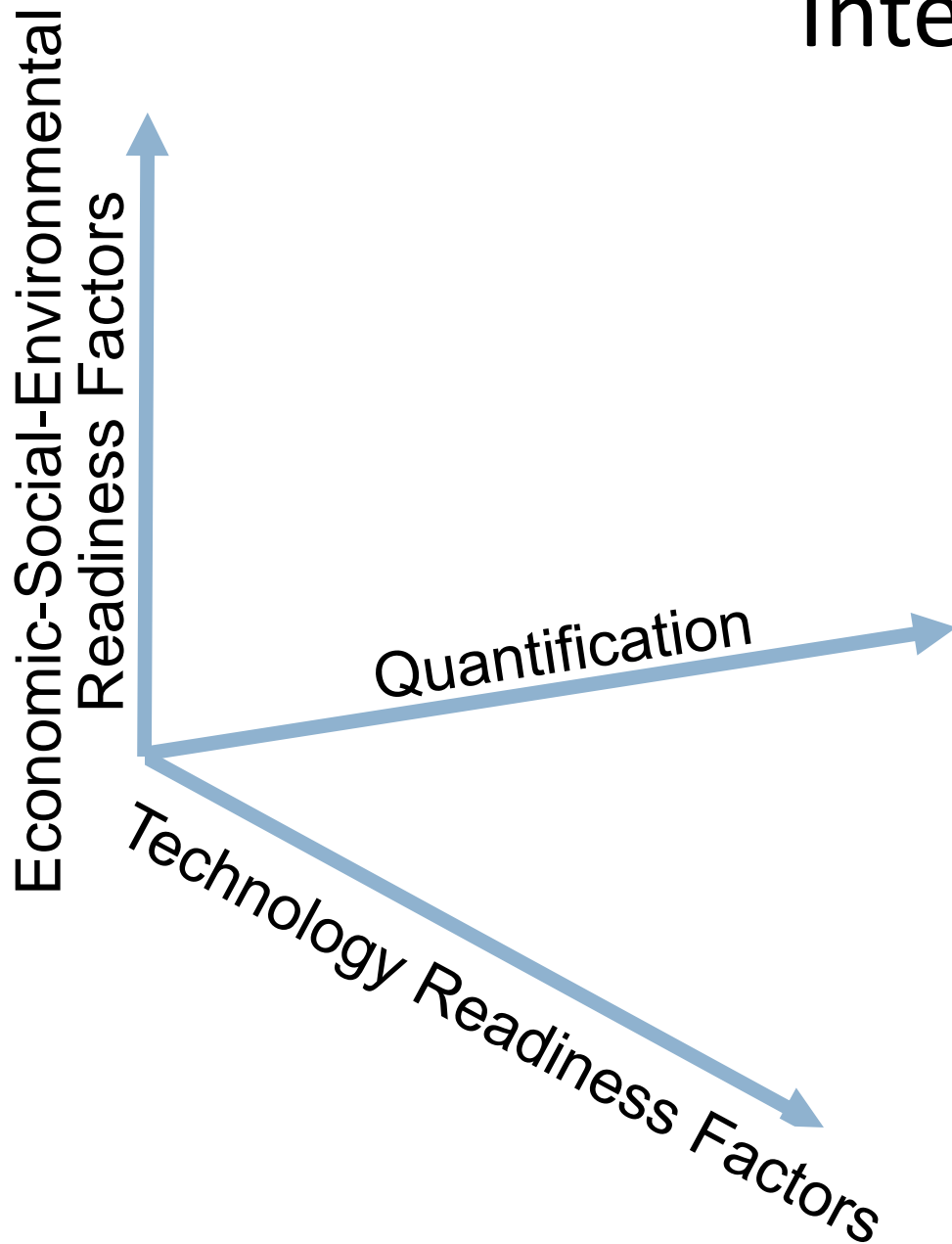
Each discipline address different challenges in the assessment of the project resources

A full understanding of the maturity of a project requires an understanding of each of these analyses



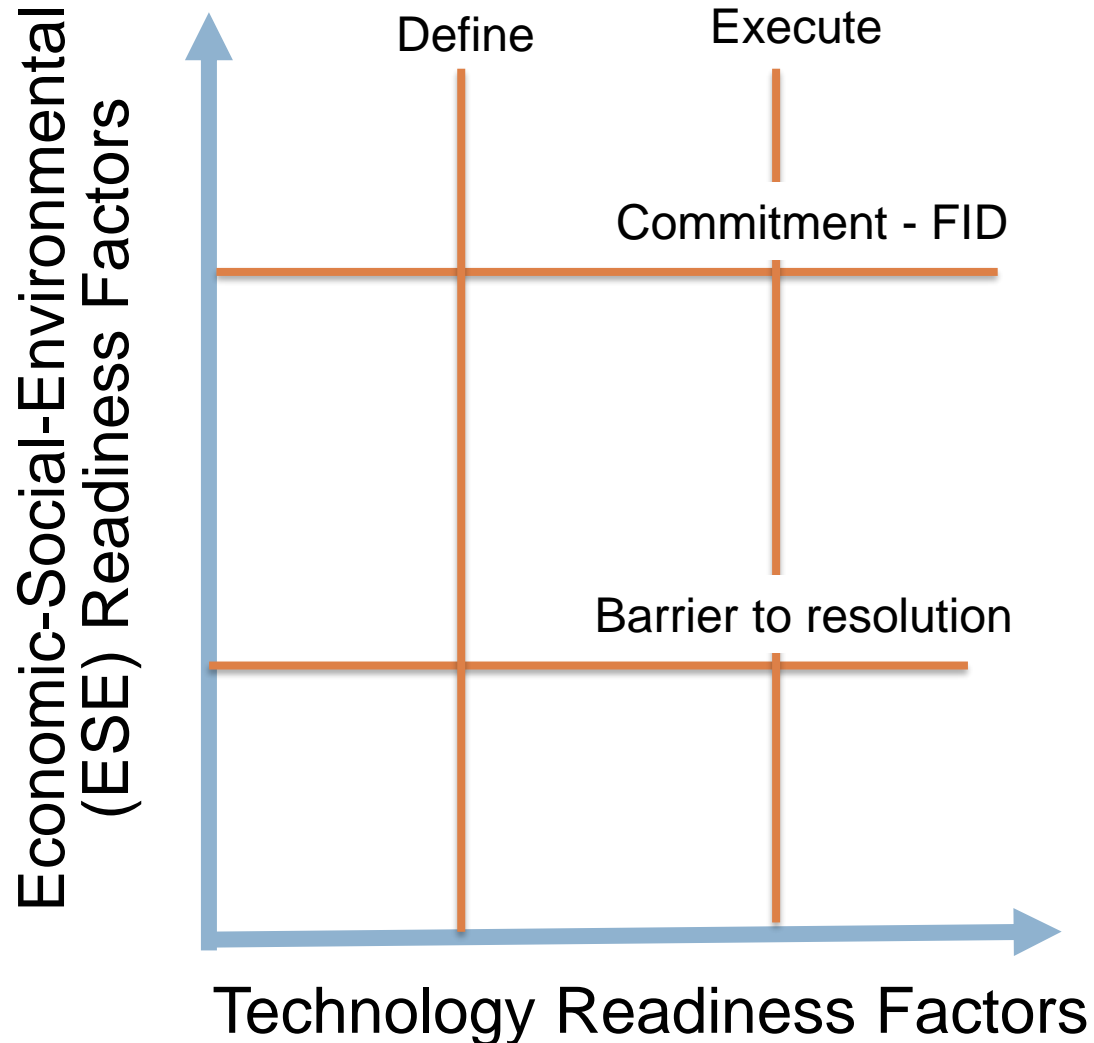
Taken from Society of Petroleum Engineers (SPE)
Petroleum Resources Management System (PRMS)

Integrated Resource Assessment



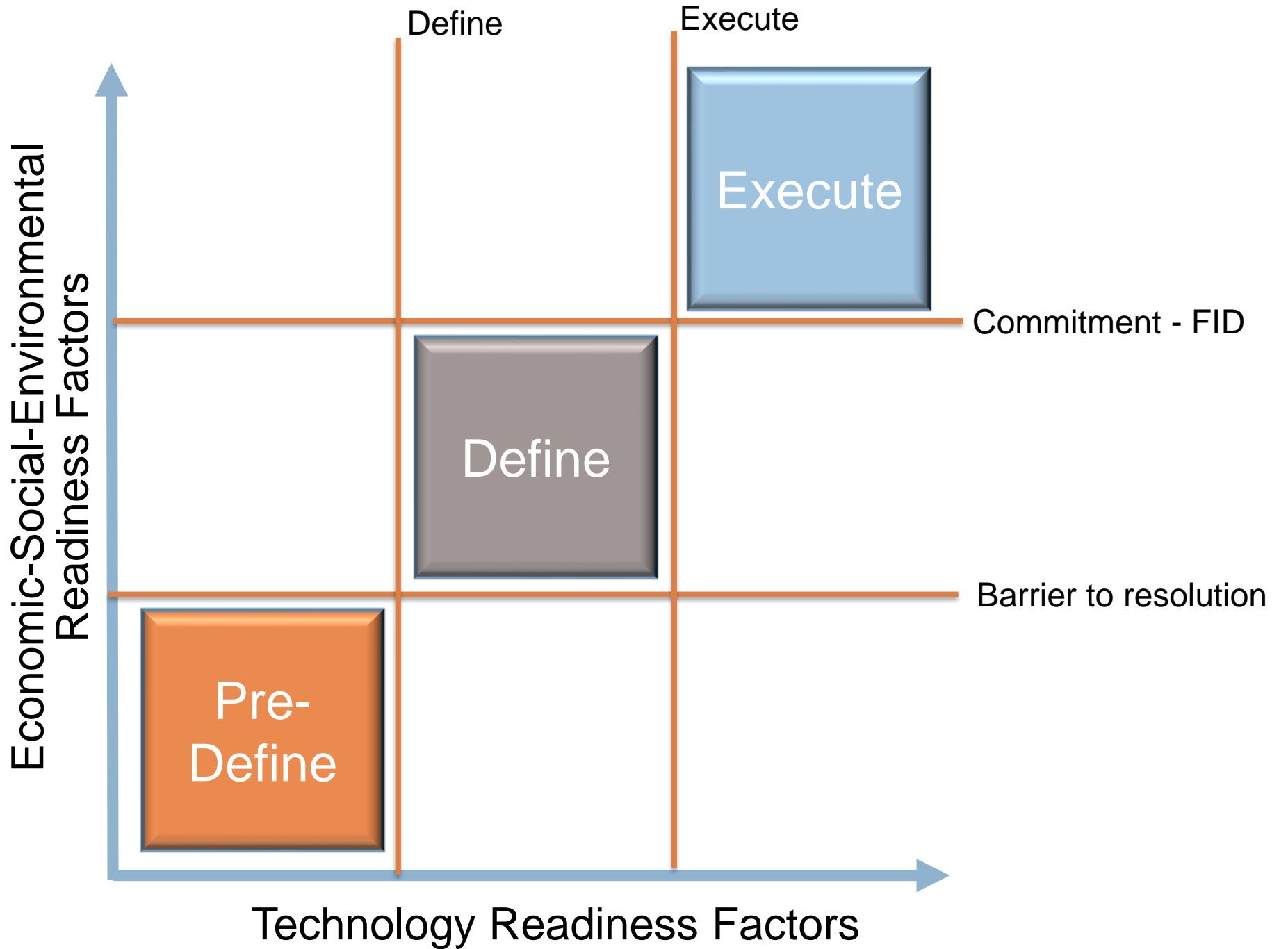
- Input from the three disciplines can be thought of as viewing the problem in a 3D view
- Each discipline can assess the project and its maturity can be described
- Thus, the barrier to a project progressing to the next stage of the capital value process (CVP) can be identified and addressed

Defining maturity: Readiness factors

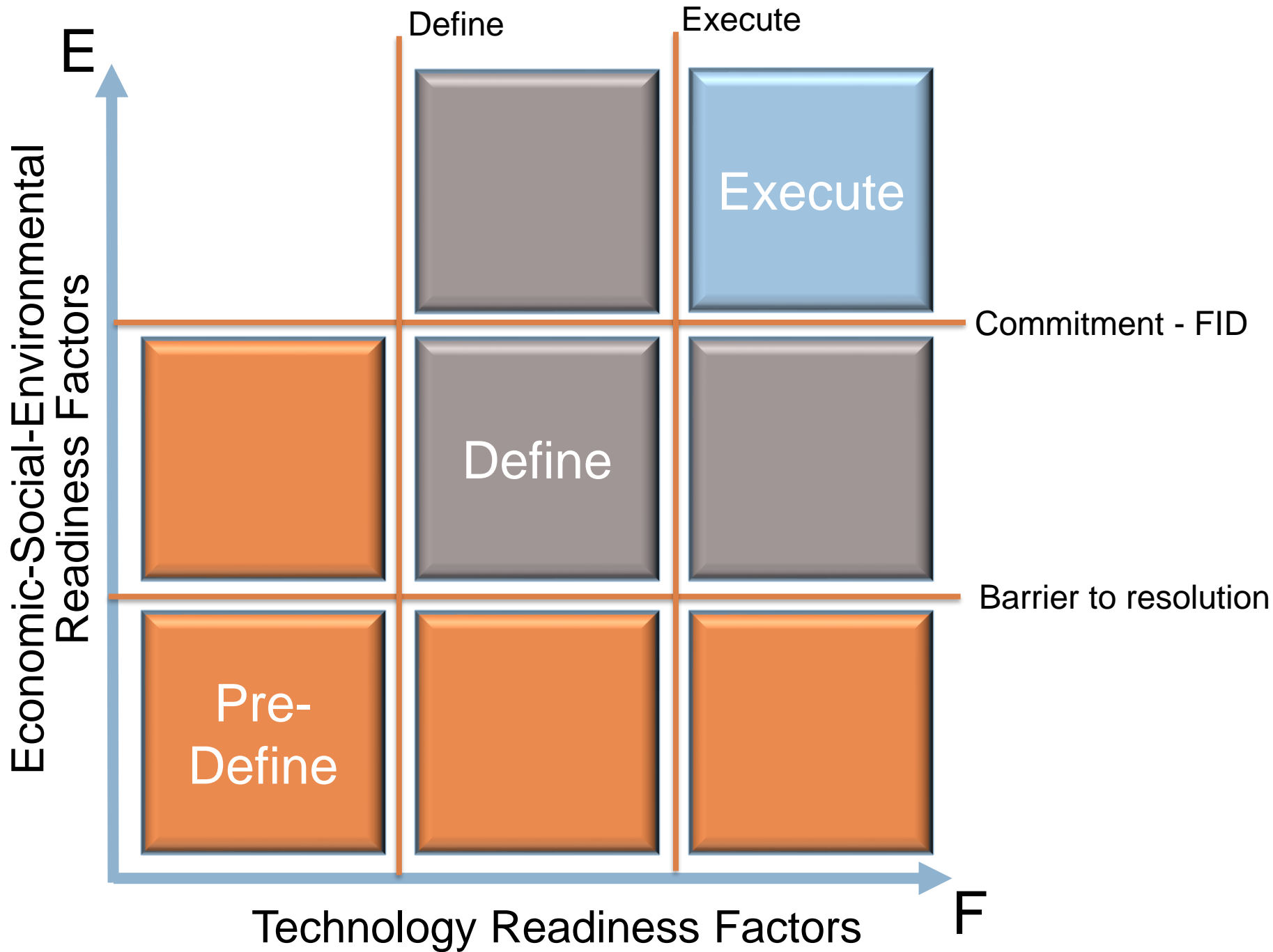


- Readiness is the potential of the project to cross the next level of maturity
- ESE readiness measures progress towards commitment and a final investment decision (FID)
- The CVP stage gates naturally fit with a project's technical or physical construction feasibility
- A project will always be classed at a single point on the grid
 - If it appears to be at multiple locations, it likely means that the project is not ring-fenced and consists of more than one project

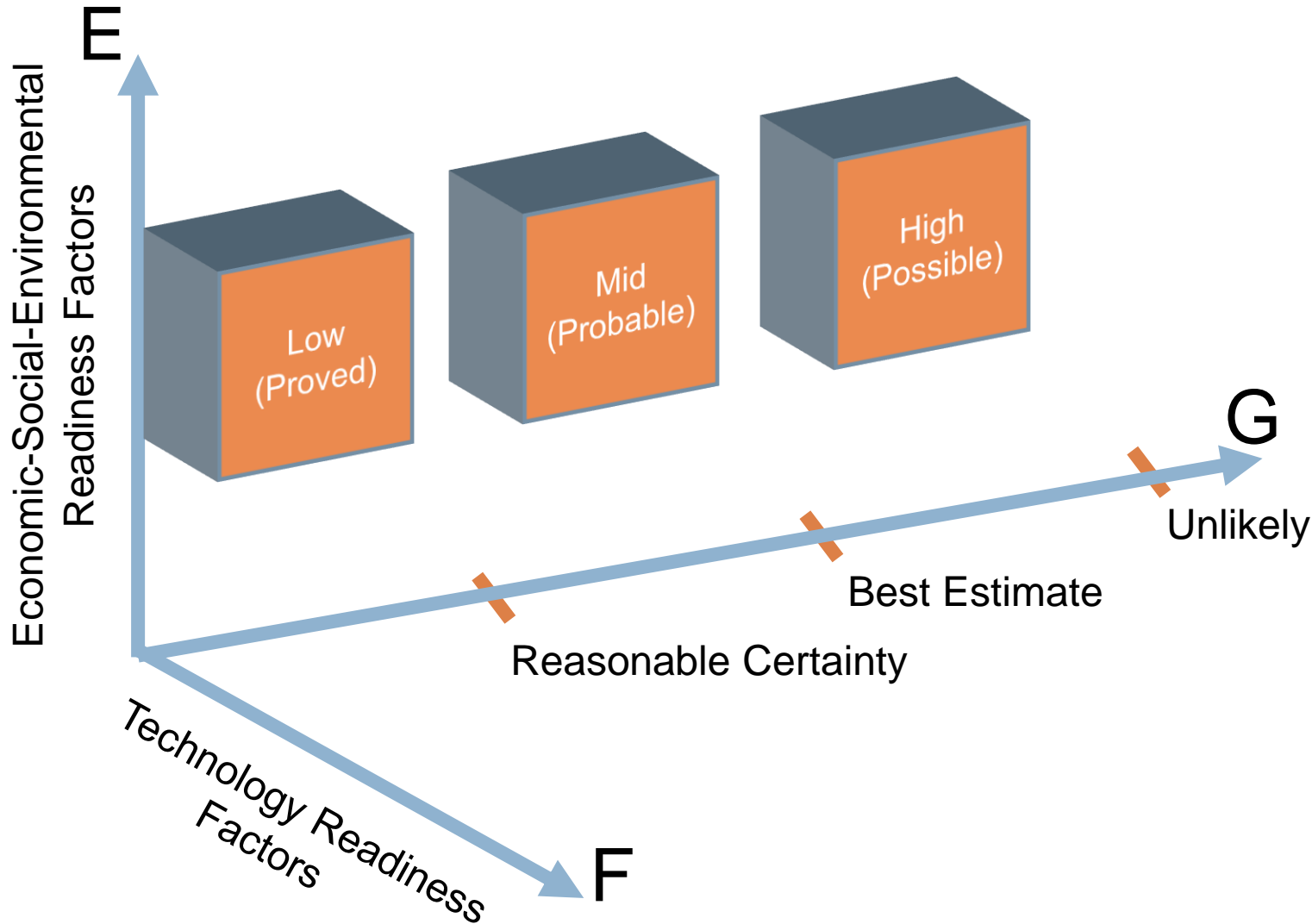
Project maturity classification



Project maturity classification



Quantification is a bit different



- The axis is not a measure of maturity, but a description of the range of value
 - Monetary
 - Non-monetary
- Resource volumes, emission volumes, net present value, production profile, quantified impact on local economy (e.g. jobs) are some of the values that can be captured.

Project Maturity Assessment

- The E and F axes are each broken into three maturity levels
- Each axis has a set of tests or readiness factor assessments
- Each test defines specific criteria necessary to achieve the next maturity level
- After evaluating all axis readiness tests, the outcome is reviewed to determine the maturity for that axis
- Generally, the axis maturity cannot be assessed higher than the least mature test – however, there may be mitigating circumstances that can allow a higher assessment with appropriate explanation and documentation
- Combining the completed analysis for the E and F axes gives the total project maturity and its mapping into its CVP stage gate

Assessment Matrices

- A simple matrix can be used as a checklist to confirm the progress of a project on the E and F axes
- This is not a complete analysis of the maturity, and additional guidance will be provided in a more complete specification for the evaluation on each axis, but it is a quick look that is understandable by the layperson
- Evidence and rationale for scoring of each test becomes a key piece of data in the management of the project portfolio. Each test is a filter for analysis

E-axis maturity matrix

Barrier to Resolution

Commitment (FID)

Access & Entitlement	<p>Necessary licence award has been confirmed in writing, is subject only to ratification, where there is track record of routine ratification.</p> <p>Some access agreements (e.g. land permits) are outstanding and represent a critical contingency, but are not expected to be resolved in a reasonable time frame.</p>	<p>Necessary licence award has been confirmed in writing, is subject only to ratification, where there is track record of routine ratification.</p> <p>Some access agreements (e.g. land permits) are outstanding and represent a critical contingency, but are expected to be resolved in a reasonable time frame.</p>	All necessary licences and agreements are executed and cover the period of entitlement.
Market & Sales Connectivity	<p>There is a market for the product, with at least one means of connection.</p> <p>There is sufficient evidence to support the assessment that agreements necessary for sales will be forthcoming.</p>		
Authorisation & Commitment			
Economic Criteria			
Environmental & Social Conditions			

Project maturity assessment

- Taking the tests from the E and F axes we can go into the matrix presented on slide 9 and have a unique assessment of the maturity
- The outcome should be an indication of the current stage gate, or of the need to have a stage gate review
- Note that the tests on the E and F axes are independent of the commodity being produced or how that commodity will be used:
 - Liquid petroleum could be further refined for kerosene or used in plastics
 - Uranium could be further enriched or used directly as fuel
- Where differentiation of product is necessary, this is accounted for in the quantification stage on the G-axis

Consistent classification and management of all resources



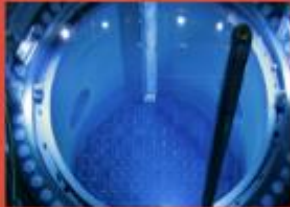
Minerals



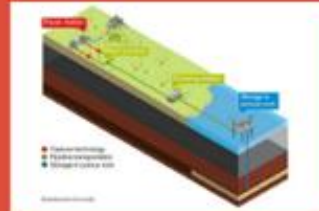
Petroleum



Renewables



Uranium



Injection



Anthropogenic

The matrix can be used for any commodity - providing a consistent framework for the comparison of different projects