

Analytisk tilnærming til klimarisiko



RYSTAD ENERGY

Oslo,
21 Februar, 2018

Lars Eirik Nicolaisen, partner
Jo Husebye, principal

The document is subject to revisions. Rystad Energy is not responsible for actions taken based on information in this document.



Proposed agenda

Introduction to Rystad Energy and our approach to Transition Risk

Results from studies of upstream emission intensity benchmarking

Results from studies of stranded resources

A way of thinking about Transition Risk through an investor lens

Office locations



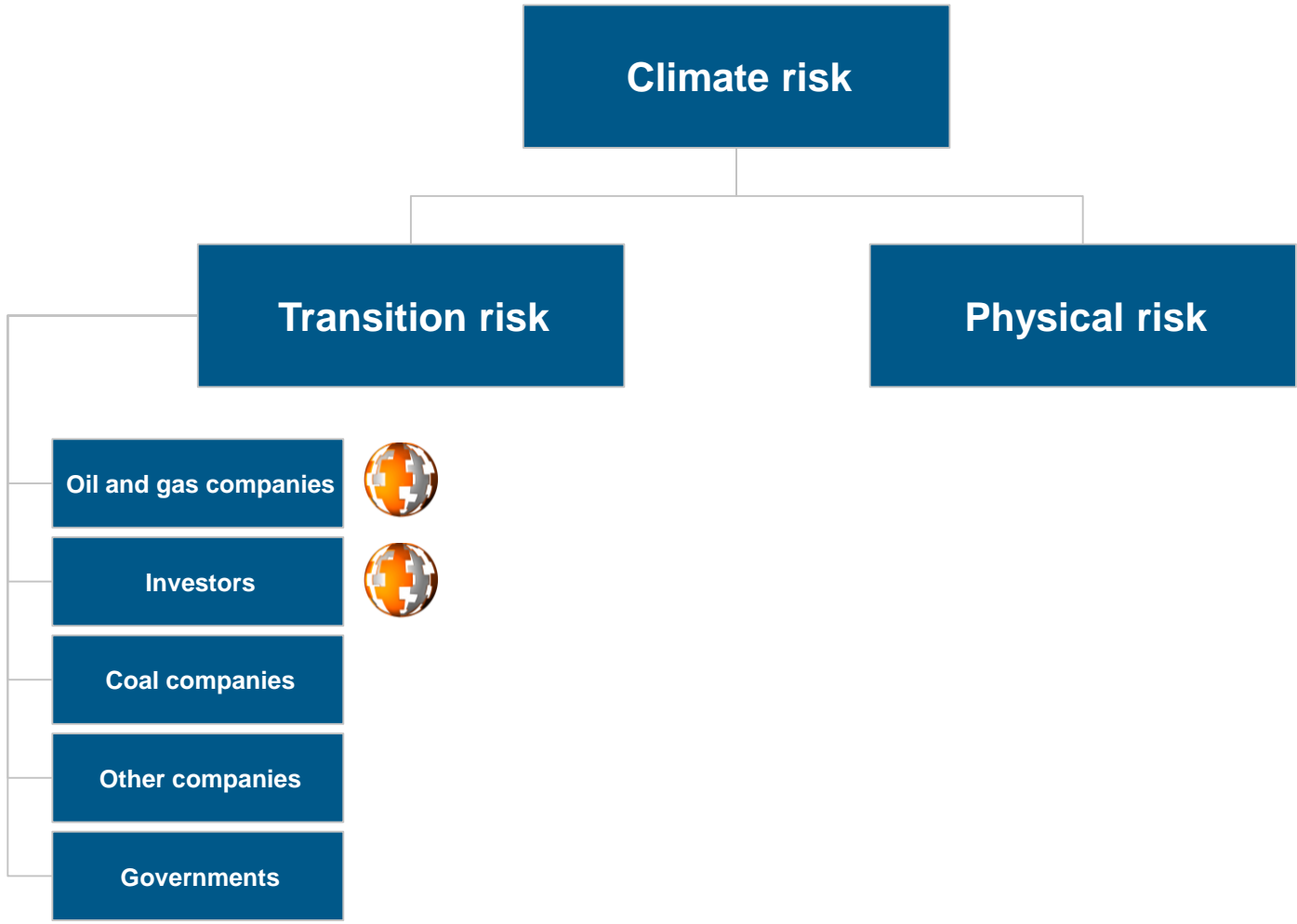
Rystad Energy: Independent energy knowledge house established in 2004, headquartered in Oslo and with a global presence.

Databases: Providing a range of databases for operators, suppliers and the finance market

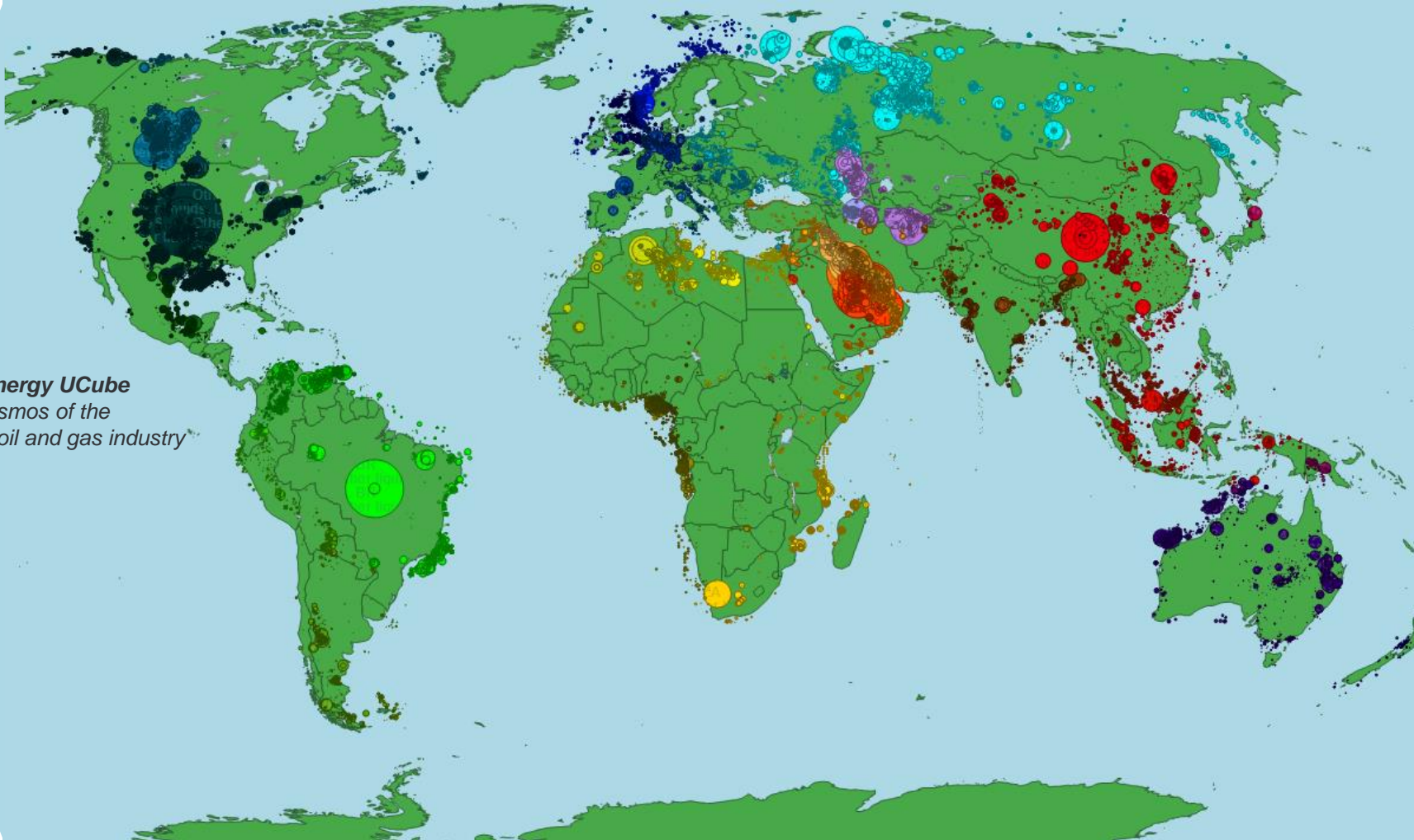
Analytics: Offering an extensive library of market reports, commentaries and analysis.

Consulting: A leading advisor on strategy, markets and business development within the energy space globally.

Rystad Energy experience and «coverage» of Climate Risk



Our approach and heritage: A bottom-up database of ~60.000 upstream oil and gas projects



Rystad Energy UCube
A microcosmos of the upstream oil and gas industry

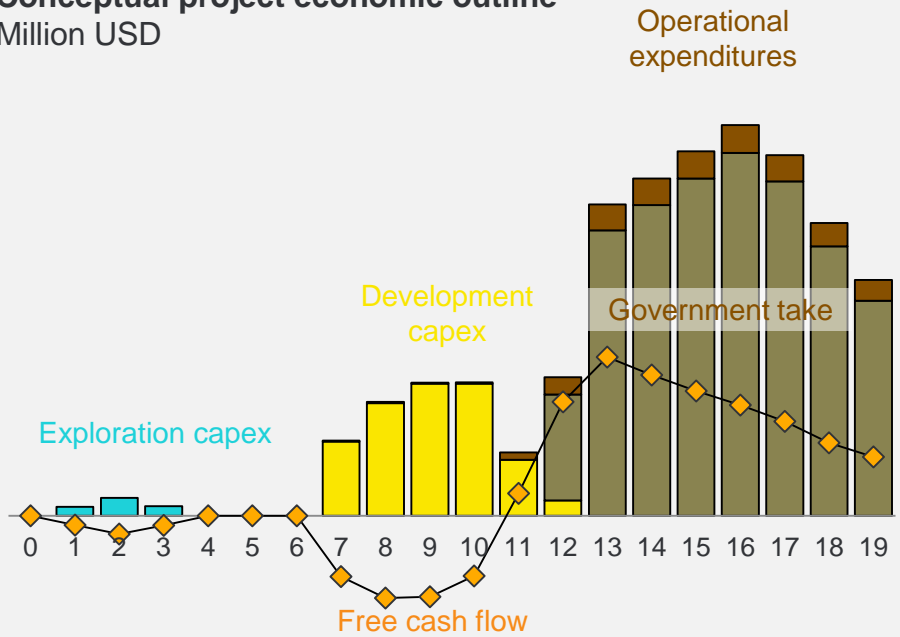
We are uniquely positioned to pinpoint which projects would fare better under reduced demand

WE FOLLOW CASH FLOWS OF ALL UPSTREAM PROJECTS

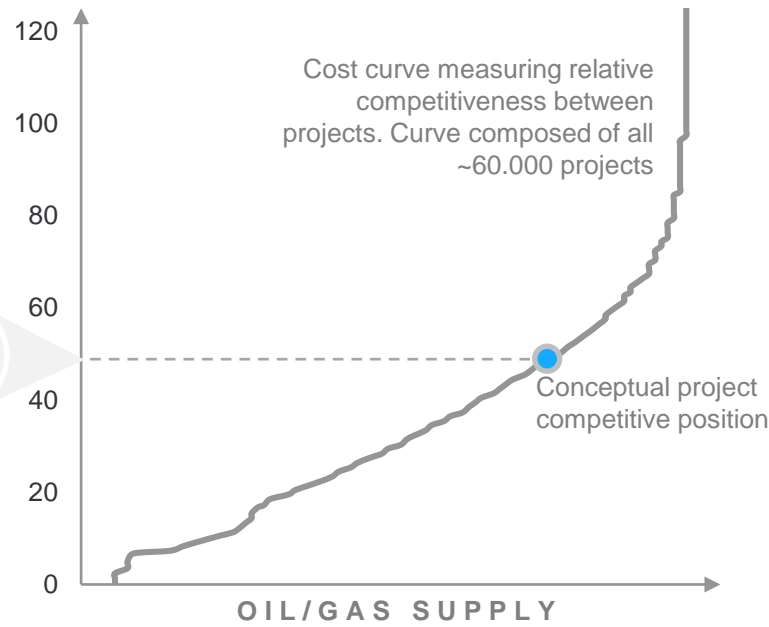
...AND USE BREAKEVENS* TO PINPOINT ECONOMIC FEASIBILITY

Conceptual project economic outline

Million USD



Conceptual project breakeven
50 \$/bbl



*We typically define «breakevens» on a go-forward basis, meaning that we account for those costs to be incurred on a forward looking basis. Further, we define our breakevens on an NPV10 basis meaning that it describes the oil price needed for the upstream owners to achieve 10% IRR

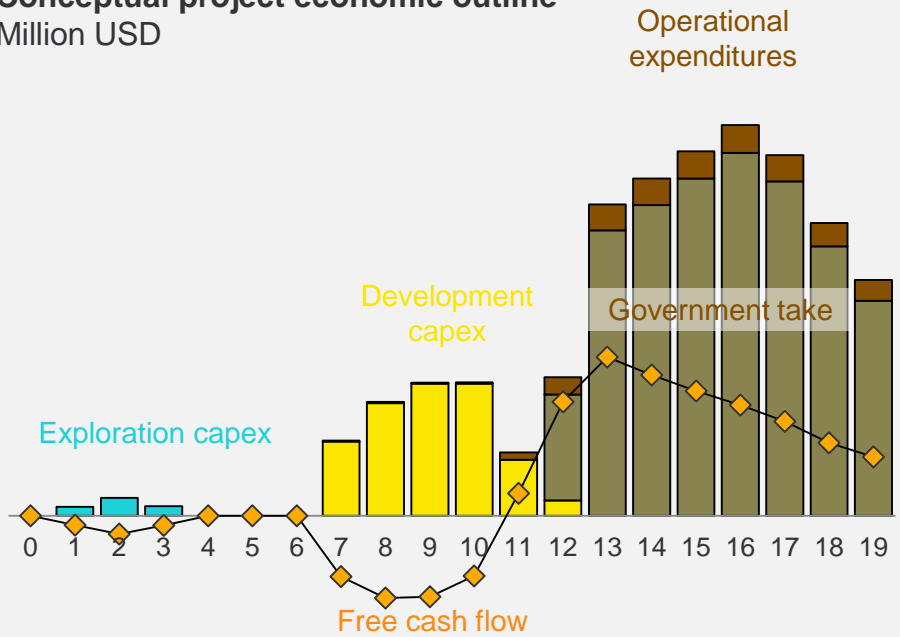
We are uniquely positioned to pinpoint which projects would fare better under reduced demand

WE FOLLOW CASH FLOWS OF ALL UPSTREAM PROJECTS

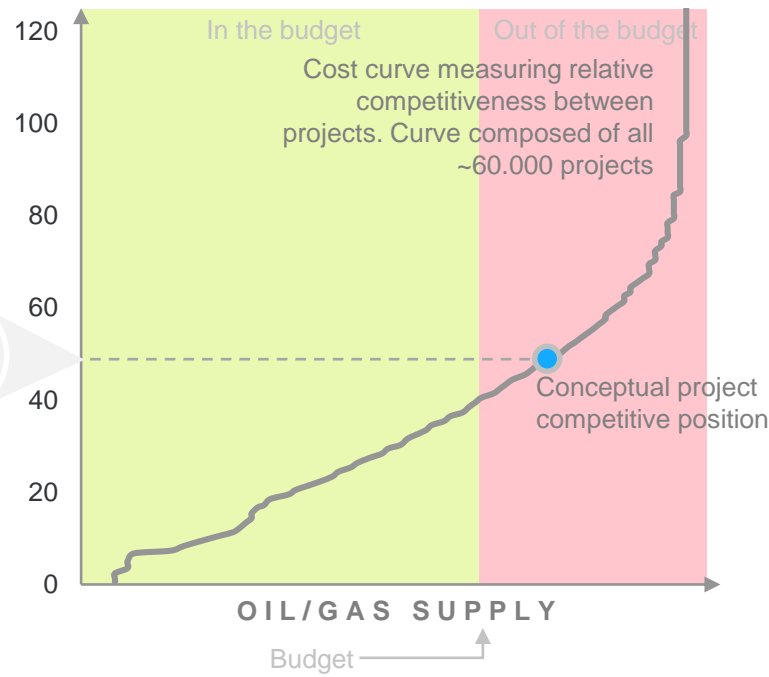
...AND USE BREAKEVENS* TO PINPOINT ECONOMIC FEASIBILITY

Conceptual project economic outline

Million USD



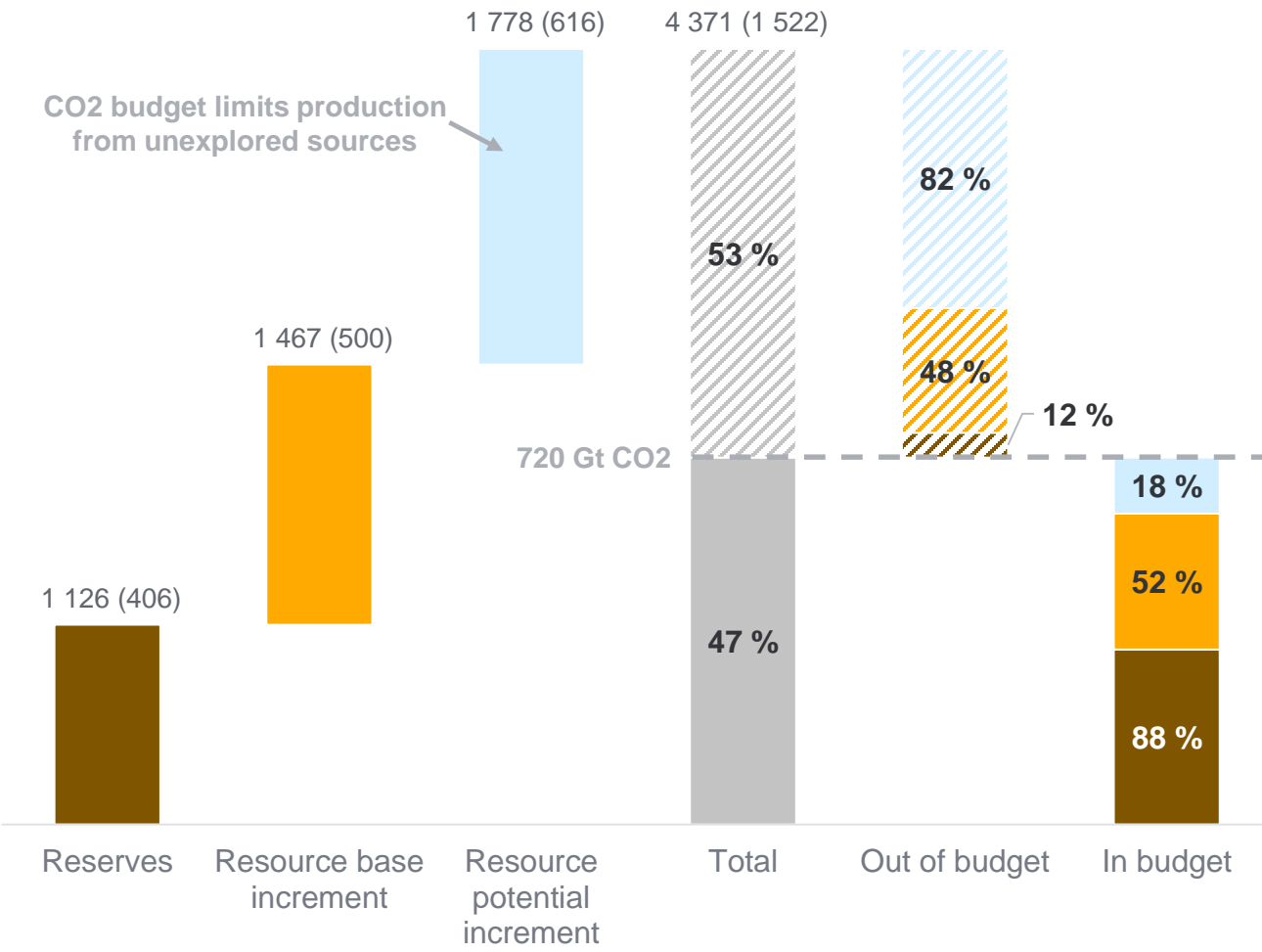
Conceptual project breakeven
50 \$/bbl



*We typically define «breakevens» on a go-forward basis, meaning that we account for those costs to be incurred on a forward looking basis. Further, we define our breakevens on an NPV10 basis meaning that it describes the oil price needed for the upstream owners to achieve 10% IRR

450 base scenario leaves little room for future resources from exploration

Oil and gas reserves, resource base and resource potential in/out of budget 2016-2100
 Total resources, billion boe (Gt CO2 in parentheses)



Source: Rystad Energy research and analysis