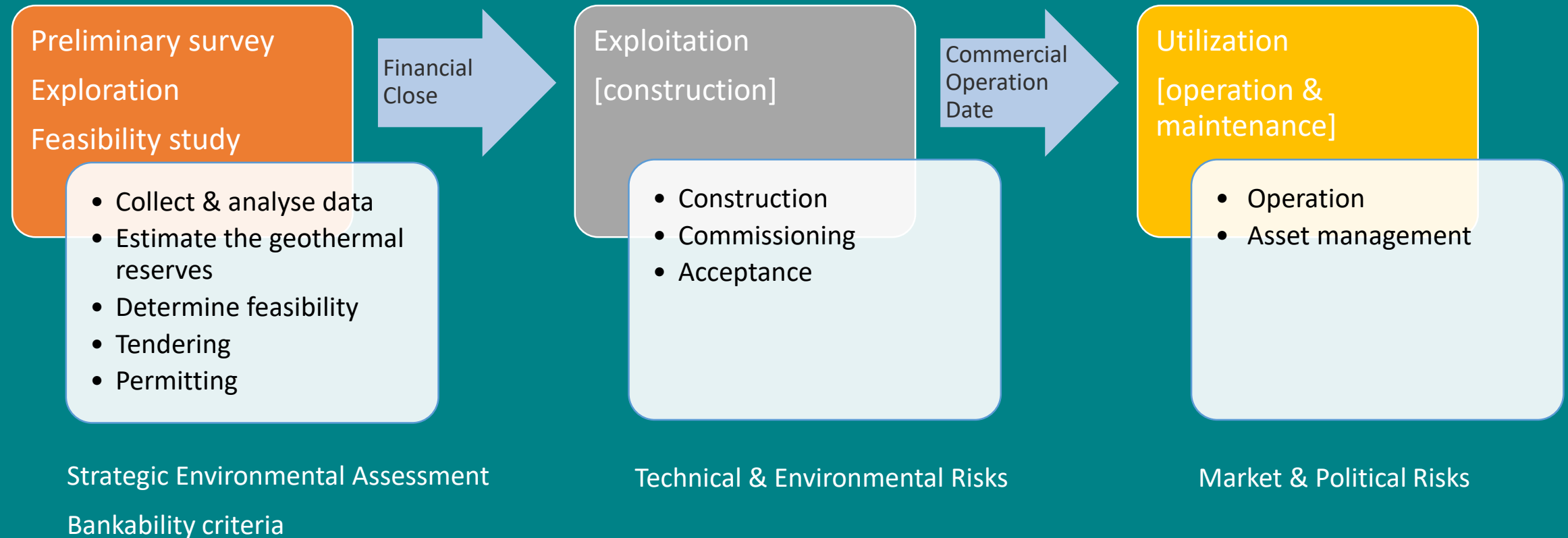


*March 2016, Bandung*

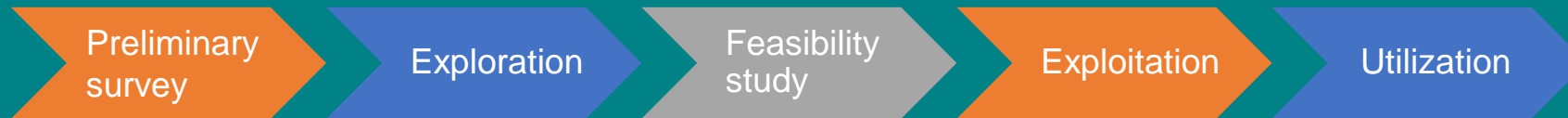
# Geothermal plant project phases and decision making

Pre-workshop ITB

# Geothermal energy

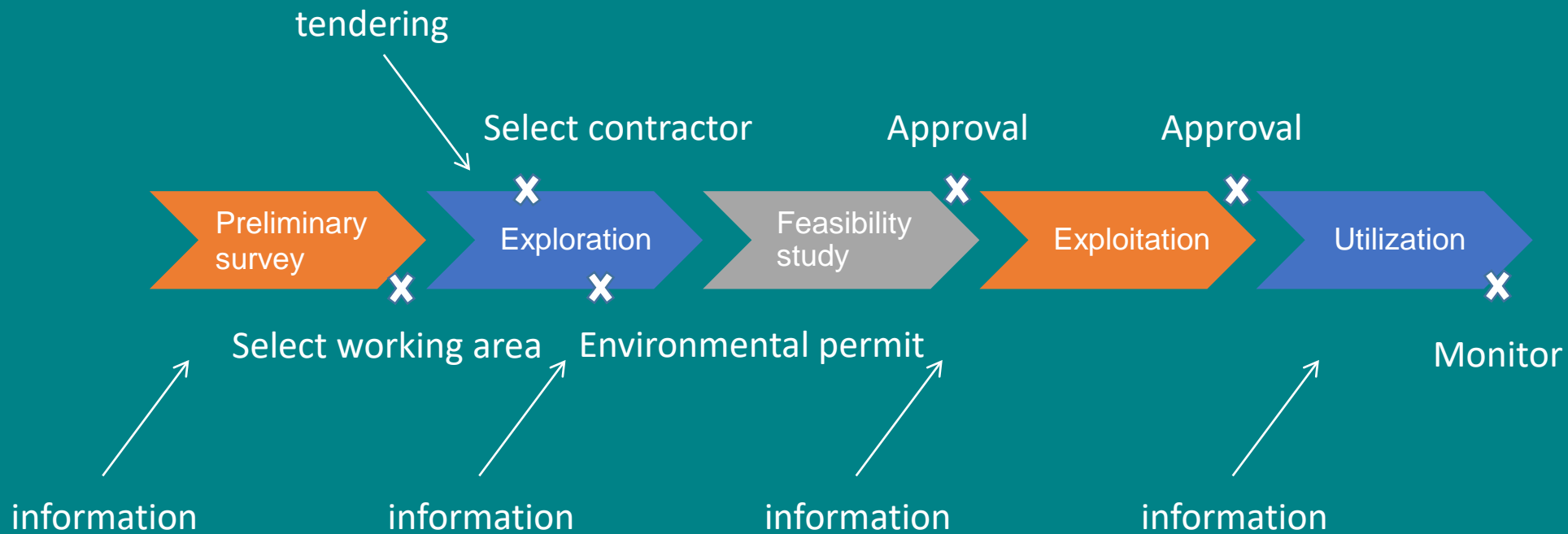


# Geothermal energy plant Project phases



1. Preliminary survey – collect & analyse data to predict location as well as existence of geothermal resources.
2. Exploration – geological/ physical/ chemical research to obtain an estimate of the geothermal reserves
3. Feasibility study – obtain information determine the technical, economical and environmental feasibility of a proposed business plan and/or activities plan
4. Exploitation - series of activities conducted in a specific Working Area comprising of drilling of development well(s), re-injection well(s), the construction of field and supporting facilities as well as Geothermal production operation.
5.
  - a. Direct Utilization (DU)
  - b. Indirect Utilization (IU)

# Project Decisions Government



# Project management – assessment criteria

Geothermal law

Minister determines  
WA (16.1)

L/P issued by Min. (23.2) to conduct  
exploration, exploitation and utilization  
(30).

Enterprise holder  
conducts  
Expl.&Util. within  
its working area  
(20.2)

Financial close

Commercial  
operation date

Government conducts  
PS (17.2/17.3)

Min. offers WA  
through tender (18)

Environmental  
permit (31.3)

Holder of L/P must submit the  
result of the feasibility study to  
the Min. for approval (32.2)

Preliminary  
survey

Tendering

Select  
contractor

Feasibility  
study

Contract  
requirements

Design review

Construction &  
commissioning

System  
acceptance

## Preliminary survey

Interconnection requirements  
Structural/ geotechnical  
Site specific issues  
Analyse design options

## Energy forecast

Detailed survey  
Potential of the Well  
Technology selection  
Energy estimates

## Design Review

Compliance  
Structural/ geotechnical  
Interconnect studies  
“Good practices”

## Tendering

Define project criteria  
Develop RFP  
Release RFP

## Financial forecasting

Preliminary energy prediction  
O&M cost estimate  
Financial analysis

## Construction & commissioning

Commissioning  
Acceptance

## Selecting contractor

Review Proposals  
Technology Evaluation  
Corporate Evaluation  
Comparison of bids

## Contract requirements

Construction contract  
Performance guarantee  
O&M agreement  
Power purchase agreement

## System acceptance

Regulatory approvals  
Construction monitoring/ inspections  
Project closeout process  
Summary report

Assessment criteria



# Bankability criteria

Uitwerken mbv

- Worldbank document
- Nature of credit risk in project finance