

THE 9TH INDONESIA GEOTHERMAL ASSOCIATION ANNUAL TECHNICAL MEETING

**GRAHA BIMASENA
14 DECEMBER 2009**

THEME:

Indonesia entering the era of achieving 4,700 MW :
To be the leading geothermal power producer



IS THE CURRENT TENDER PROCESS OF GEOTHERMAL WORKING AREAS (WKP) ATTRACTIVE TO INVESTORS, AND CREDIBLE / BANKABLE TO FINANCING INSTITUTIONS / LENDERS?

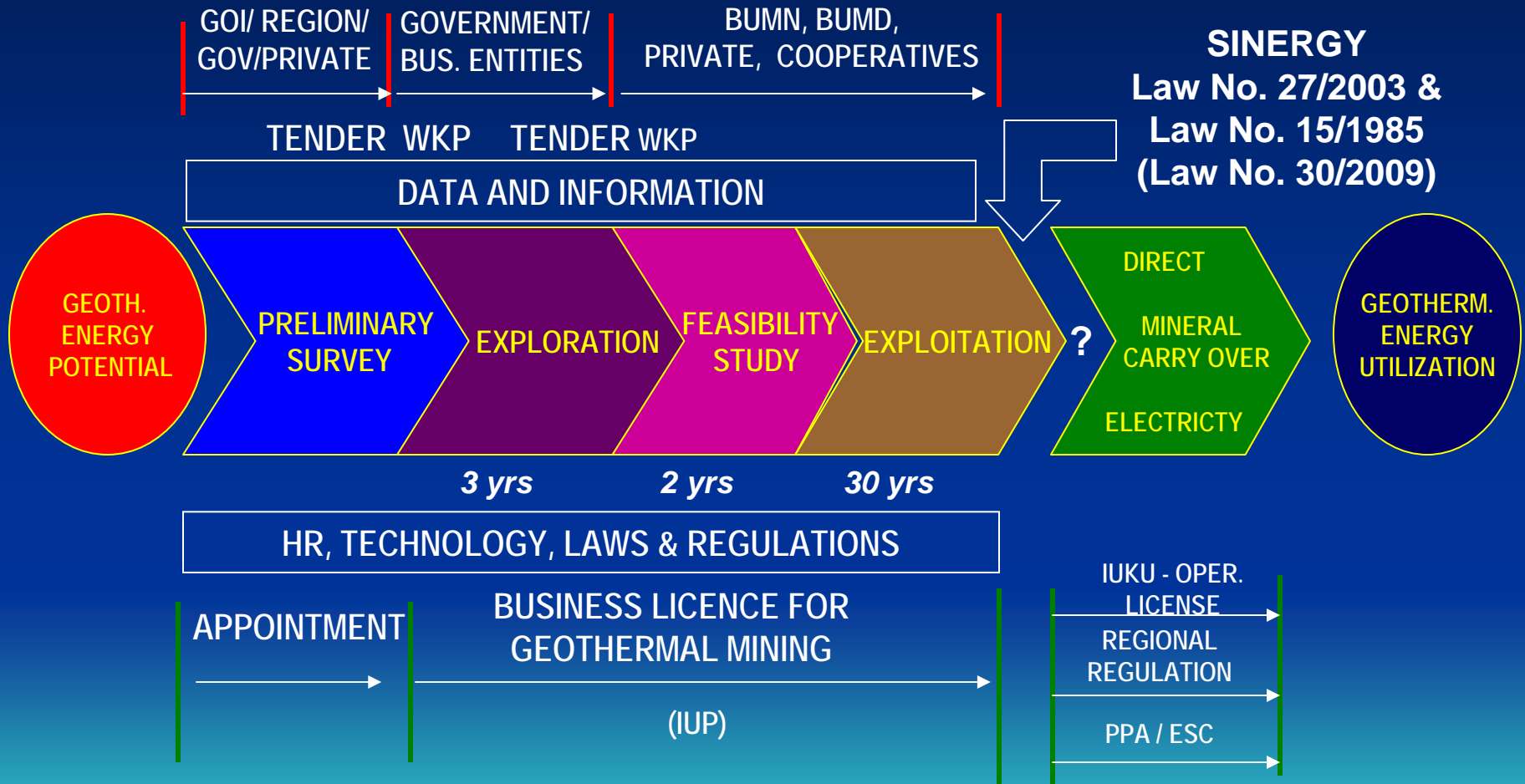
- **Existing and Desired WKP Tender Process**

- Existing WKP Tender Process
- Alternative WKP Tender Processes
- Process Improvements – criteria for a good process to attract private participation
- Discussions and Recommendations

- **Desired Results of the Tender Process**

- Workable, clear and transparent, and consistent permit and contractual rights and obligations
- Predictable and competitive economics, manageable risks, consistent fiscal and non-fiscal terms and conditions
- Credible and bankable for project financing application
- Discussions and Recommendations for the 4,700 MW Geothermal Project Development

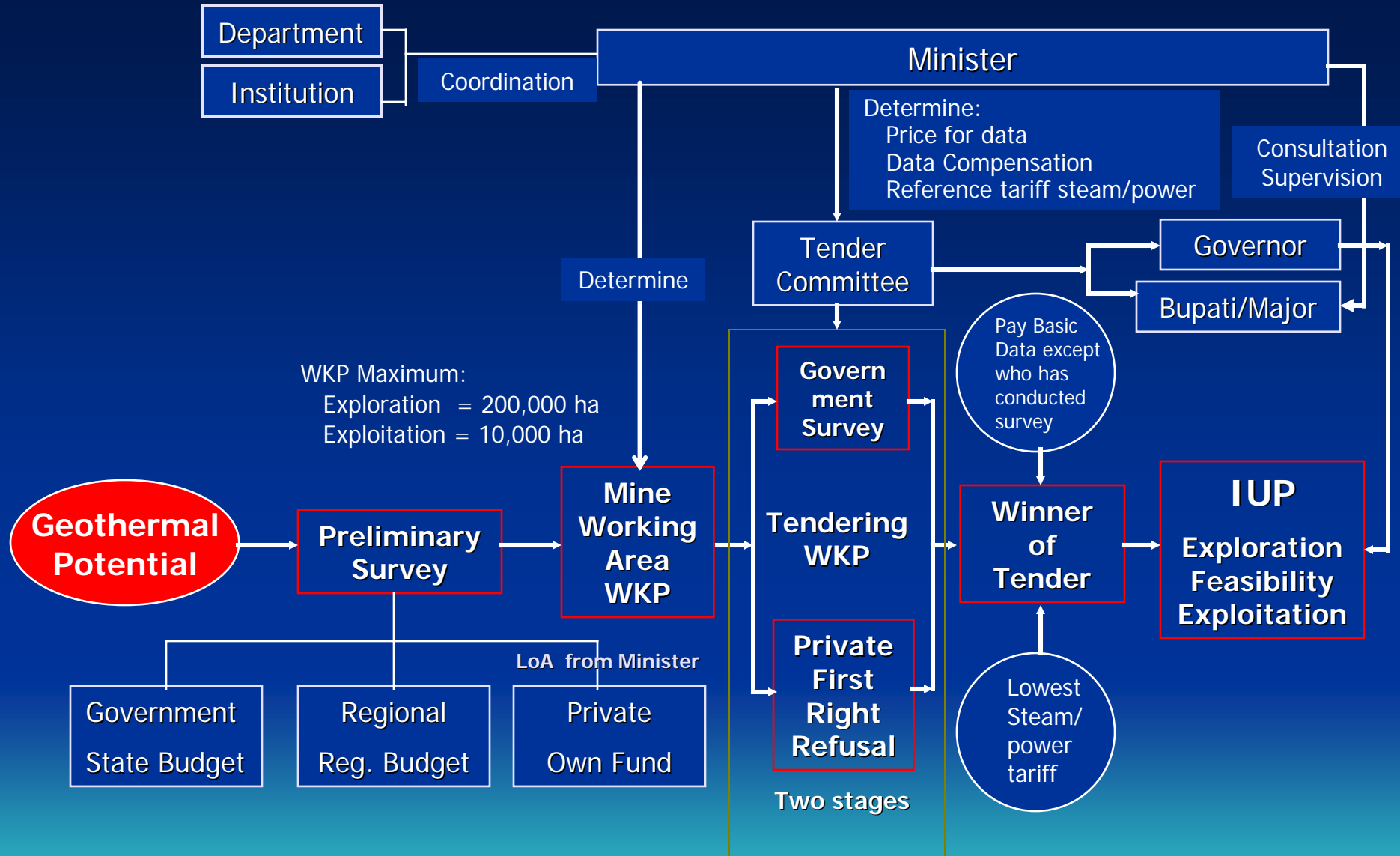
GLOBAL PROCESS FLOW DIAGRAM GEOHERMAL POWER PROJECT



GEOHERMAL POWER PROJECT TRANSACTIONAL PROCESSES

- PRELIMINARY SURVEY TO DEFINE GEOHERMAL WORKING AREA (WKP)
 - Government/Regional Governments conduct preliminary survey
 - Business Entities conduct preliminary survey upon Government appointment
- GEOHERMAL WORKING AREA (WKP) TENDER PROCESS TO OBTAIN GEOHERMAL BUSINESS PERMIT (IUP)
 - Government/Regional Government to conduct preliminary survey and initial exploration activities; Business Entities to conduct advanced exploration, feasibility study, exploitation and steam production activities
 - Business entities to conduct exploration, exploitation and steam production activities
- IUP HOLDER TO GENERATE AND SELL ELECTRICITY TO PLN
 - IUP Holder to conclude or negotiate Energy Sales Contract (ESC) or Power Purchase Agreement (PPA) with PLN

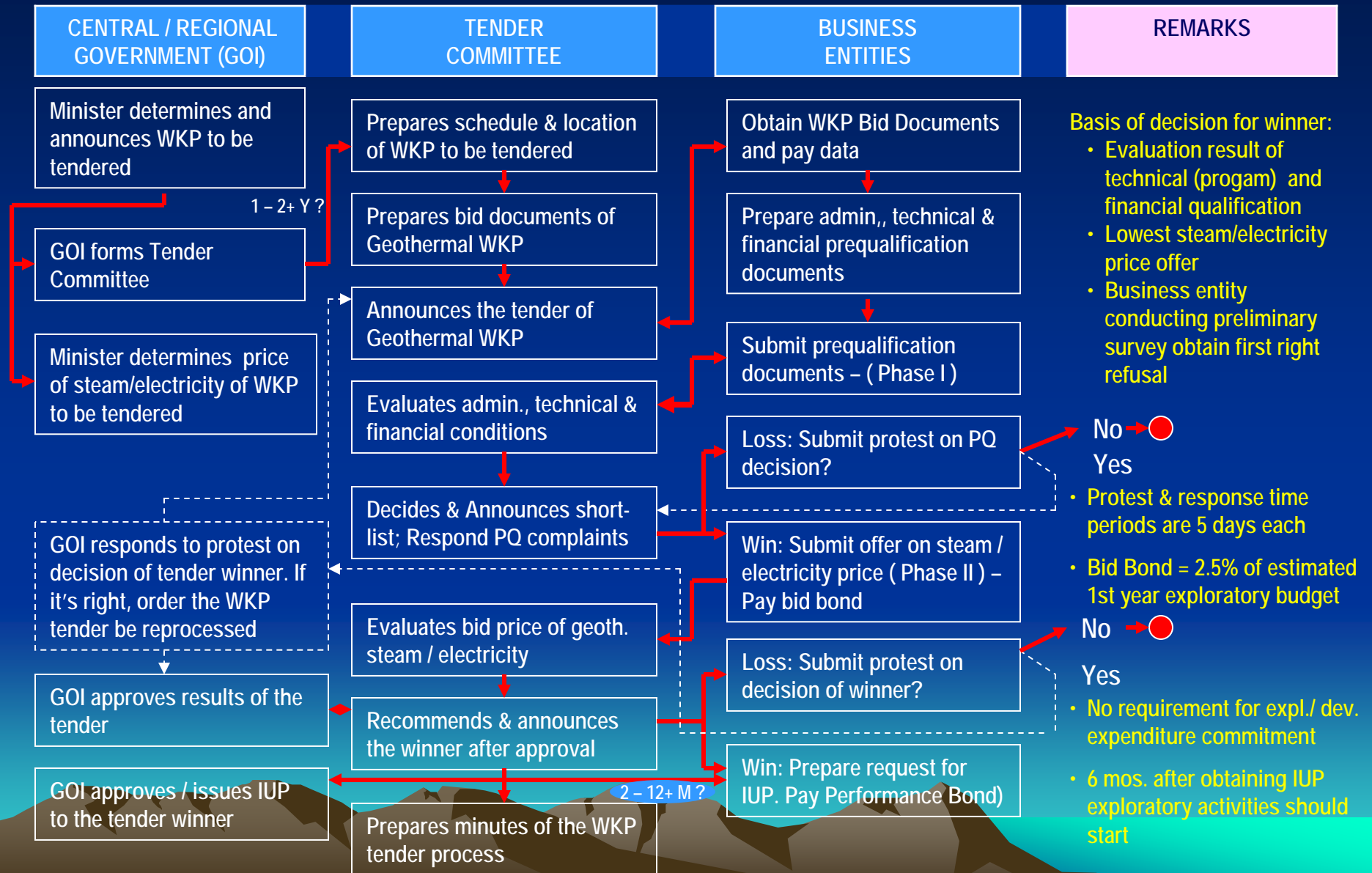
SIMPLIFIED EXISTING WKP TENDERING PROCESS (I)



PRELIMINARY SURVEY BY GOI OR PRIVATE BUSINESS ENTITIES
EXPLORATION / EXPLOITATION BY PRIVATE BUSINESS ENTITIES

WKP TENDERING PROCESS

SOURCE: GOV. REG. No. 59/2007



IS THE CURRENT TENDER PROCESS OF GEOTHERMAL WORKING AREAS (WKP) ATTRACTIVE TO INVESTORS, AND CREDIBLE / BANKABLE TO FINANCING INSTITUTIONS / LENDERS?

“NO, BUT WHY”?

#	ISSUE OF CONCERN	RECOMMENDED IMPROVEMENT / RESOLUTION
1	Time consuming: WKP announcement to WKP tender, WKP tender process, determination of winner, land indemnification, environmental assessment, and issuance of IUP	Process Improvement – assign time frame and target. Issue Minister Reg. on WKP Tender relating to determination of winner. GOI to help resolve land matters prior to tender process
2	Lack of sufficient and good quality data & information to develop good program	Improve quality of preliminary survey and expand the scope of the survey; capacity building of implementing personnel; equip with latest technology tools; support with required funds
3	Uncertainty on pricing policy; electricity price is subject to negotiation with PLN	Apply feed-in tariff as the electricity base price; Negotiation on price adjustment, not base price
4	Lack of economic attractiveness / incentives	GOI to issue clear and firm policies & regulations on fiscal and non-fiscal incentives, appropriate government guarantee, and energy pricing policy
5	Off-taker risk	GOI to support PLN's performance to enforce PLN to discharge its payment obligation

IS THE CURRENT TENDER PROCESS OF GEOTHERMAL WORKING AREAS (WKP) ATTRACTIVE TO INVESTORS, AND CREDIBLE / BANKABLE TO FINANCING INSTITUTIONS / LENDERS?

“NO, BUT WHY?”

#	ISSUE OF CONCERN	RECOMMENDED IMPROVEMENT / RESOLUTION
6	Land acquisition	GOI to ensure WKP locations are in line with master plan of space utilization, including forestry, plantation, etc. Reg. Gov. actively support developers for land acquisition, preferably prior to WKP Tender
7	No IUP Model, No PPA Model to give general ideas of key rights & obligations, and general terms and conditions	Create IUP Model and PPA (Heads of PPA) Model and include these models in the bid package
8	Lack of Regional Government personnel's competencies	Capacity building on geothermal energy development. GOI expert supports thru temporary assignment to regions for WKP auction
9	Certainty of law (legal certainty)	Complete all required implementing regulations prior to starting the tender. Issuance of IUP and PPA (model with general terms and conditions) shall be simultaneously done (!)
10	“Contract” sanctity	GOI assurance to honor contract or conditions set forth in the permit or geothermal business license

ALTERNATIVE WKP TENDER PROCESSES

Two alternatives of WKP Tendering Processes that comply with prevailing law & regulations :

- 1. GOI conducts preliminary survey or authorized interested private entities to conduct preliminary survey o.b.o. the Government, at own cost and risk, to define WKP.**

GOI tenders to private entities to obtain IUP (geothermal business license) and conduct geothermal business activities covering exploration, feasibility study, and exploitation within the WKP

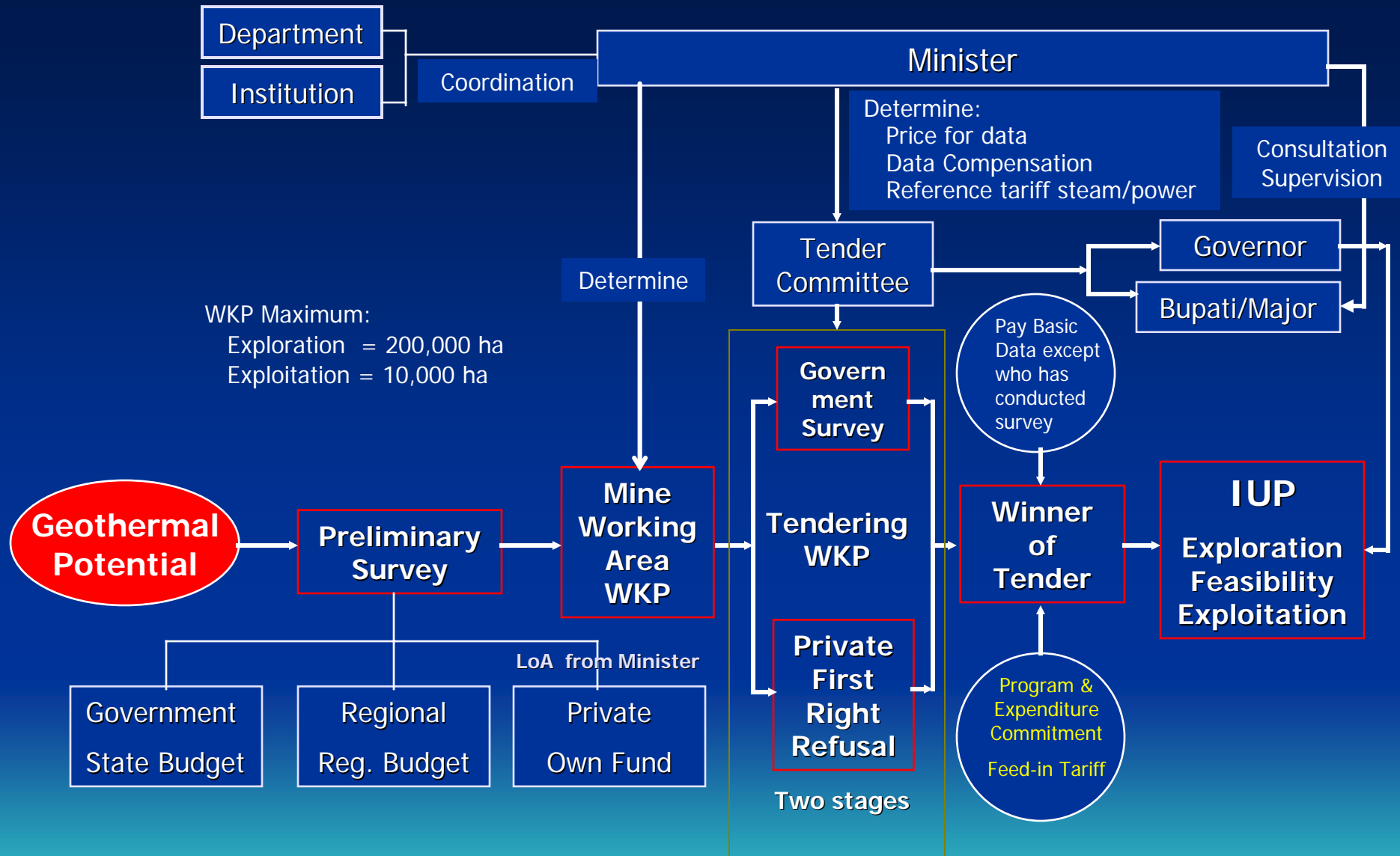
The private entities conducting the preliminary survey is granted the first right for the WKP they have surveyed

- 2. GOI conducts preliminary survey to define the WKP and carries out basic exploration activities in the WKP.**

GOI tenders to private entities for the IUP to carry out advanced exploratory, feasibility study, and exploitation activities within the WKP

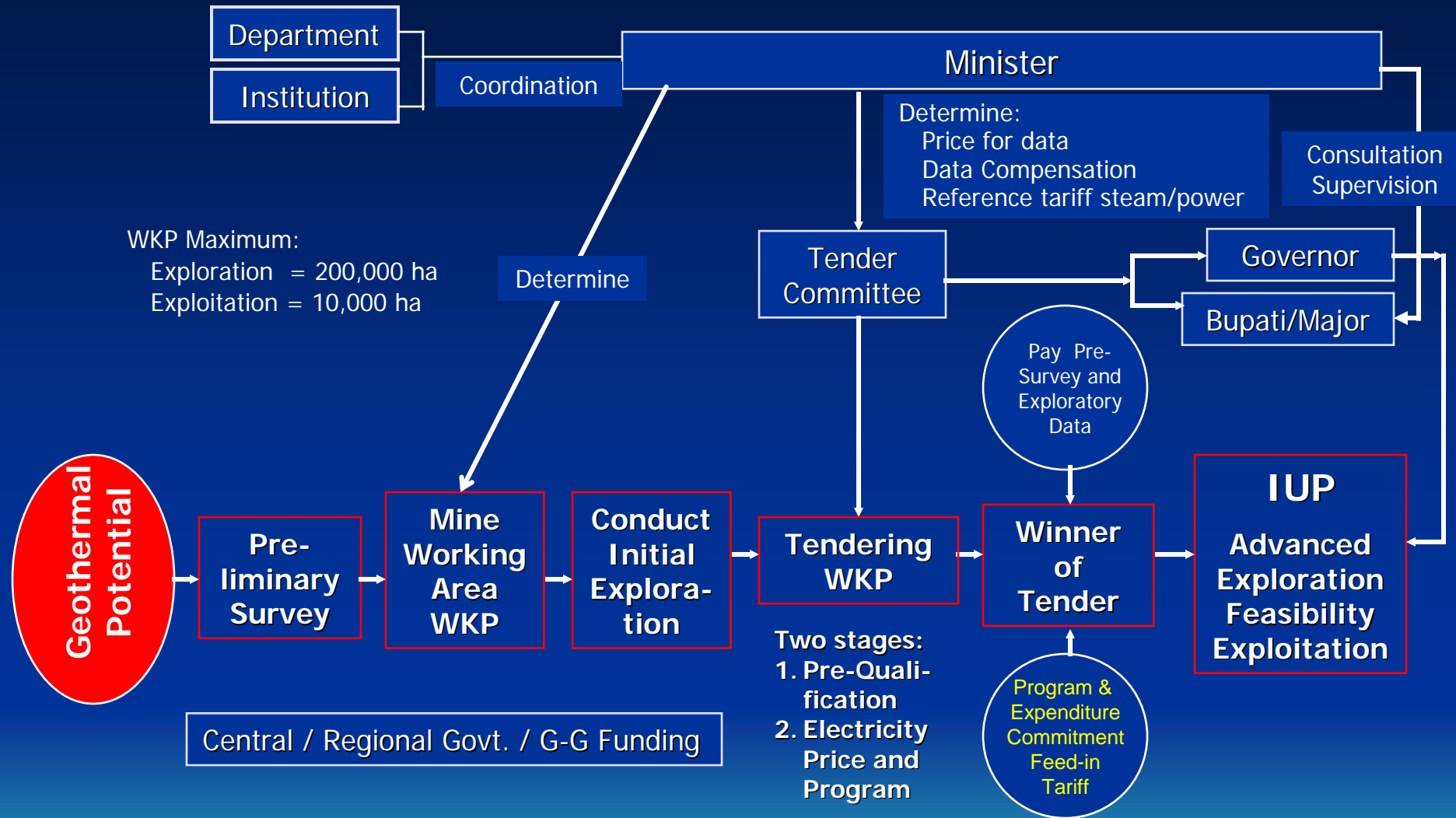


MODIFIED EXISTING WKP TENDERING PROCESS (I)



PRELIMINARY SURVEY BY GOI OR PRIVATE BUSINESS ENTITIES
 EXPLORATION / EXPLOITATION BY PRIVATE BUSINESS ENTITIES

SIMPLIFIED ALTERNATIVE WKP TENDERING PROCESS (II)





**PRELIMINARY SURVEY & INITIAL EXPLORATION BY GOVERNMENT
 ADVANCED EXPLORATION, FEASIBILITY STUDY, EXPLOITATION BY PRIVATE**

FORCED FIELD ANALYSIS – MODEL 1 WKP AUCTION

FOR INTEGRATED GEOTHERMAL POWER PROJECT



GOI / BUSINESS ENTITIES CARRY OUT PRELIMINARY SURVEY

FORCES IN FAVOUR 	 FORCES AGAINST
<ul style="list-style-type: none"> • No GOI burden to spend high cost, high risk exploratory expenditures • Developers take high cost and high risk exploration business activities and may expect high return: <ul style="list-style-type: none"> – May attract major investors, with competent development / operatorship, provided appropriate risks and rewards are presence – Create open competition for the use of advanced technology and financial commitment to carry out the exploratory and exploitation program to achieve the best result provided good quality data and information from the preliminary survey are available 	<ul style="list-style-type: none"> • Uncertainty and high risk in estimating geothermal resources and reserves of the WKP, especially with poor data/information from the preliminary survey – difficult to determine bid price of the geothermal steam / electricity • Requires good quality and sufficient data from Preliminary survey to develop and mitigate risk for the WKP exploration and development program • High electricity price to compensate high exploratory risk • Long WKP auction process • Require developers / investors with high capacity for financing, technology supports, and risk taking • Require high equity in project financing, at least equal to the exploration cost

FORCED FIELD ANALYSIS – MODEL 2 WKP AUCTION

FOR INTEGRATED GEOTHERMAL POWER PROJECT

GOI CARRY OUT PRELIMINARY SURVEY AND EXPLORATION

FORCES IN FAVOUR 	 FORCES AGAINST
<ul style="list-style-type: none"> • Enable business entities to develop and make commitment on advanced exploratory activities, feasibility study, and exploitation as well as offered electricity price calculation with better certainty due to available data from preliminary survey & exploration • Reduced exploration risk which may impact lower geothermal electricity price • Faster WKP auction process • Business entities pay exploratory data and information with less risk implication • May attract developers with low to medium financial capacity and technical competency • May obtain financial / funding supports for financing of the total project since the projects exclude high risk exploration • May obtain G-G funding support for less risky small to medium scale geothermal resources 	<ul style="list-style-type: none"> • GOI take the cost and high risk of preliminary survey and exploratory undertaking • Competent business entities and risk takers loose opportunities to take high risk – high reward geothermal power projects

DISCUSSION (I)

- Both WKP Auction Methods can be implemented in compliance with prevailing law (Law No. 27/2003) and regulations (GR No. 59/2007) with due consideration to the respective supporting and opposing forces (advantages and disadvantages) of the WKP conditions:
 - **Method #1 – Exploration activities by Business Entities**

For **large medium - scale WKP** requiring high risk, high capital investment due to limited funding capacity of the Government.

Preliminary survey to define the WKP can be conducted by GOI / Regional Government or by interested Business Entity / Entities at its own cost and risk through direct appointment by Minister (or tender process). The business entity conducting the survey will be granted “the first right refusal” when the WKP is tendered.
 - **Method #2 – Preliminary Survey and Exploration by the Government**

For **small – medium scale WKP** requiring relatively low capital expenditure and low market risk (areas with shortage of electricity and have geothermal resources)
- For both WKP Auction, reliable and good quality data and information are required by tender participants to mitigate risk and enable good and effective exploratory and exploitation program

DISCUSSION (II)

- To expedite the WKP Auction, it is recommended that the Government applies the “feed-in” tariff concept for the price of electricity for each WKP, which value can be determined by the Minister of ERM in accordance with Paragraph 20, GR No. 59/2007 based on Guideline for determining geothermal steam / electricity price as stipulated in Paragraph 18, GR No. 59/2007
- The price of electricity based on feed-in tariff concept is as follows:
 - A fixed amount of electricity base price for each WKP to be auctioned, whereby Business Entities could expect IRR 16-18% with due consideration on risk factors, taxes, fiscal and non-fiscal incentives, government guarantee / comfort letter, and other specific conditions of the WKP.
 - A range of electricity base price for each WKP to be auctioned whereby Business Entities could expect a minimal IRR of 15% but capped at 20% with due consideration on risk factors, taxes, fiscal and non-fiscal incentives, government guarantee / comfort letter, and other specific conditions of the WKP.

The value of feed-in tariff can be renegotiated depending on geothermal reserve discovery where the Government will guarantee a minimum IRR of 15% for less successful exploratory undertaking, but cap IRR at 20% for successful exploratory efforts due to application of better technology and program.

DISCUSSION (III)

- With the application of “feed-in tariff” concept for the steam / electricity price, there will be no negotiation required for the base price, except for the price adjustment except in the case of price range with guaranteed minimum and maximum IRR
- The winner of the tender should not be based solely on the lowest electricity price offered, but based on the results of evaluation of the administrative, technical and financial qualification, assessment of the exploratory and/or development program for year 1 to year 3, and commitment to spend expenditures for exploration and development of geothermal resources of the respective WKP
- Accordingly, the formulation of Minister ERM Regulation on the implementation of tender evaluation as stated in Paragraph 23, Article (4) of GR No. 59/2007, should be expedited
- For the bid bond, the guideline stated in Para. 22, Art. (4), GR No. 59/2007 shall apply
- Tender participants shall be able to show credit-worthiness from reliable Banks/Financial Institutions, indicating that they are capable of financing their equity or the estimated initial exploratory cost

DISCUSSION (IV)

- Funds for small – medium scale WKP preliminary survey and initial exploratory activities can be made available from the state budget for infrastructure development and/or G-to-G soft loans / grants from environmental funds / green funds / climate change funds that may be available from financial institutions (World Bank, ADB, JICA) or from government policies relating to Depletion Premium, Renewable Portfolio Standard, or Carbon Funds.
- Above financial resources can be used on priority basis to develop small to medium Geothermal WKPs in areas outside Java – Bali, e.g. take 5 projects initially, where there are critical shortage of electricity but have potential geothermal resources, such as in NTT (Flores, etc), NTB, North Maluku, North Sulawesi, Gorontalo, etc.
- Results of selling data / information fro preliminary survey and exploration activities shall be retained in the sector to repay loan and use for development of other WKPs.
- For WKP with medium – large scale resource potential, it is recommended that the WKP auction include exploration activities (Method -1) and other upstream and downstream development as an integrated projects, by applying feed-in tariff concept, with fixed or a range of values, as the base price. This will avoid lengthy price negotiation process with PLN, as the single buyer of electricity generated by geothermal IPPs.

DESIRED RESULTS OF THE TENDER PROCESS

- **Workable, clear and transparent, and consistent permit and contractual rights and obligations to reflect legal certainty**
- **Predictable and competitive economics, manageable risks, consistent fiscal and non-fiscal terms and conditions**
- **Credible and bankable for project financing application – legal sanctity of license (IUP) and contract (PPA) and predictable economics and manageable risks**

DEVELOPMENT OF 4,700 MW GEOTHERMAL RESOURCES FOR THE 2ND PHASE OF 10,000 MW ACCELERATED POWER PLANT PROJECT (I)

Recommended Actions

- Prepare required regulatory supports related to geothermal development – offer regulatory advocacy supports from API, MKI, academic community, and competent consultants
- Review and carry out WKP Tender process improvement by giving the time frame and target accomplishment for each step of the process. Make the process transparent and accountable
- Defined WKP to be tendered and determine which tendering or auction scope / process to be taken for each WKP – Exploration by GOI or by Private
- Determine electricity base price based on “feed-in tariff” concept for each WKP prior to the WKP auction. The price should incorporate: government guarantee (with predefined limited liability), fiscal and non-fiscal incentive program

DEVELOPMENT OF 4,700 MW GEOTHERMAL RESOURCES FOR THE 2ND PHASE OF 10,000 MW ACCELERATED POWER PLANT PROJECT (II)

Recommended Actions

- **With feed-in tariff concept, determine the winner of WKP auction by their commitment on the program and expenditures during the first to third years of WKP exploratory / development activities**
- **Prepare Model IUP (with clear rights and obligations); Model ESC or PPA; and Model Heads of Power Purchase Agreements. These should be included in the bid documents issued to potential bidders. Issuance of IUP and Heads of PPA should be simultaneously done to provide legal certainty!**
- **Carry out capacity building / competency development for members of tender committees; priority given to areas where WKPs to be tendered are located**
- **Establish Interdepartmental Supervisory and Monitoring Board (similar to Perpres 71/2005) with clear description of duties and Key Performance Indicators**

References:

1. “Cost of Government Participation in Geothermal Exploration”; Madjedi Hasan - Puguh Sugiharto - Anton Wahjosoedibjo, PENConsulting Team, 2009
2. “Study on Fiscal and Non-Fiscal Incentives to Accelerate Private Sector Geothermal Energy Development in the Republic of Indonesia”, BKF – JICA / WJEC, 2009
3. “Strategic Considerations Concerning GOI Support for Green Energy: The Case of Geothermal Energy”, Almizan Ulfa, October 2009

Thank You

Anton Wahjosoedibjo – Dec 2009



EXISTING AND DESIRED WKP TENDER PROCESS

Existing Process for Tendering WKP

- Based on Government Regulation No. 59/2007, Chapter III
 1. GOI (Central or Regional) announces WKP to be auctioned
 2. GOI forms Tender Committee and legalizes WKP auction results
 3. Tender Committee prepares Tender Documents:
 - Administrative, technical and financial requirements
 - Method of submitting bid documents
 - Method for evaluating the bid (offer)
 - Procedures for determining winner of the tender process
 4. Bidders submit administrative, technical, and financial qualification prerequisites (Phase II) to the Tender Committee
 5. Tender Committee evaluates bidders' administrative, technical and financial qualification
 6. Tender Committee decides those passing administrative, technical and financial qualification screening and prepare bidders' short-list
 7. Tender Committee request short-listed bidders to submit financial offer - the price of steam or electricity and related requirements in sealed envelop
 8. Determination of winners is based on bidders' administration, technical and financial qualification and the lowest steam / electricity price offered
 9. More detailed evaluation process to determine the winning bidder shall be regulated in Ministerial Regulation
- .GOI issued IUP (Geothermal Business Permit) to the winner