Potensia Desenvolvimentu Rezerva Rekursu Naturais hodi Substitui Mina & Gas Iha Futuru
Significant petroleum potential (up to ~6 BBOE)

Requires $25-30 bn in investment (to 2040) across onshore, shelf and deepwater plays

Need to confirm resource potential, change perceptions on prospectivity and business environment

Maximize, sustain investment in exploration, unlock development and extend production

Upstream revenue at stake (2015-2040) up to $40 bn and additional value from:

- Favourable interest rates
- Skills development (>1,000 jobs by 2030)
- Local content growth (>1.7 bn to local supply chain to 2030)
- TIMOR GAP participation (operated production ~70 kboed by 2030)
Map Showing Petroleum Prospects in JPDA

LEGEND
- Oil Well
- Suspended Oil Well
- Abandoned Oil Well
- Oil Well with Gas Shows
- Oil and Gas Well
- Suspended Gas Well
- Gas Well with Oils Show
- Dry Hole w/ Oil & Gas Show
- Dry Hole with Oil Show
- Dry Hole
- Gas Well
- Jurassic Prospects
- Jurassic Leads
- Permian Prospects
- Deep Water Leads
- PSC Areas
- Undrilled Wells

Not to scale
Onshore Petroleum Potentials – T-L
**TIMOR-LESTE RESERVES VOLUME AND PROSPECTIVE RESOURCES**

**Notes:**
1) Data a combination of all external data (Rystad, IHS, Wood Mackenzie and internal ANP data (including the results of the Spectrum survey)) – see “Resource Potential & National Priorities” section in full report for more details; 2) Does not include definitive view of new prospectivity in TLEA from the 2014 CGG survey with higher resolution and view on e.g. sub-thrust, shallow and other plays; 3) 50% Greater Sunrise included in JPDA; 4) Remaining reserves for BU & Kitan calculated based on reserve data provided minus cumulative production since data of reserves estimate; 5) Based on 2014 production

**Source:** ANP data; IHS; Rystad; SBC analysis

### TIMOR-LESTE RESERVES VOLUME AND PROSPECTIVE RESOURCES

<table>
<thead>
<tr>
<th></th>
<th>Proven</th>
<th>Probable</th>
<th>Possible</th>
<th>Prospective</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MMBOE</strong></td>
<td>8</td>
<td>28</td>
<td>54</td>
<td>121</td>
</tr>
</tbody>
</table>

**Resource Life (years)**

- **High Reserves / Resource life as a result of undeveloped Sunrise field resources & declining production**
- **ANP data see up to ~2.6 BBOE**
- **Significant opportunity for future Timorese participation in petroleum**
- **Expected reserve range of 5 - 160 mmboe / field**
- **Largely Greater Sunrise and Bayu Undan**
- **Represents easiest molecules to produce & near- to mid-term focus**
EXPENDITURE REQUIRED TO DEVELOP TL RESOURCES THROUGH TO 2040

USD billion

OPEX

<table>
<thead>
<tr>
<th>JPDA Discoveries</th>
<th>Onshore¹</th>
<th>TLEA¹</th>
<th>JPDA¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1-3</td>
<td>4-6</td>
<td>5-10</td>
</tr>
</tbody>
</table>

Total Expenditure Required

$25-35 billion²

Actions to Attract Capital

1. Maximizing Production from Existing Fields
   - Field life extension, Operations excellence on Kitan and Bayu Undan to maximise recovery and value

2. Unlocking Development
   - Sunrise ($15bn), others, e.g. Kelp Deep, Chuditch ($1bn)

3. Attract Exploration Investment
   - The amount required will depend on actual prospectivity, licensing round success and exploration success

Breakeven Price (USD/bbl)

Mid- to high-case

<table>
<thead>
<tr>
<th>Onshore</th>
<th>TLEA</th>
<th>JPDA</th>
</tr>
</thead>
<tbody>
<tr>
<td>60-90³</td>
<td>75-100⁴</td>
<td>75-95⁵</td>
</tr>
</tbody>
</table>

Notes:
1) Risked Capex estimates - High scenario assumes 30% exploration success rate, 4 prospects drilled per year onshore, 2 offshore; Most likely scenario assumes 20% exploration success rate, 2 prospects drilled per year onshore, 1 offshore; 2) Most likely to high scenario range; 3) PNG Papuan lowlands and highlands range as analogue; 4) Wood Mackenzie ultra-deep upper limit; 5) Wood Mackenzie JPDA Bonaparte range

Source: ANP Data; Wood Mackenzie; IHS; SBC analysis and Capital Projects database
ISSUES AND OPTIONS TO UNLOCK MORE BARRELS

**ISSUES**

- Production is declining with no imminent new developments or re-developments

![Graph showing production decline](image)

- Extending the life of, and accelerating barrels from existing fields is the quickest & most cost-effective means to boost near-term revenue

**FIELD LIFE EXTENSION EXAMPLES**

Increasing ultimate recovery through...

**TECHNOLOGY**

- Address technical challenges and commerciality of marginal and other near-field prospects at Kitan, Bayu Undan & Elang

**REJUVENATION**

- Assess commerciality of using Enhanced Oil Recovery (EOR) to rejuvenate Kitan

**REVISED FISCAL TERMS**

- Incentivise near-field exploration & marginal develop’t at Kitan, Bayu Undan & Elang

**OPERATIONS EXCELLENCE EXAMPLES**

Increasing primary recovery through...

**ASSET MANAGEMENT**

- BU

**PRODUCTION MANAGEMENT**

- BU

Source: SBC analysis; ANPM production forecasts
TIMOR-LESTE OIL & GAS ATTRACTIVENESS

**PERCEIVED PROSPECTIVITY**¹

**BUSINESS ENVIRONMENT**²

**UNATTRACTIVE** - **ATTRACTIVE**

**Onshore**

1. **Finalise existing actions** to confirm our business environment attractiveness:
   - **FINALISE PSC / FISCAL TERMS FOR ONSHORE, TLEA AND JPDA**
   - **FINALISE REGULATIONS AND CREATE LEGAL FRAMEWORK TO OPEN UP ONSHORE**
   - **PROGRESS DEVELOPMENT TO DEMONSTRATE FEASIBILITY OF LARGE GAS DEVELOPMENTS**

2. **Complete additional actions** to improve our perceived prospectivity:
   - **INVEST IN SUBSURFACE DATA, ANALYSES, PLAY AND RESOURCE ASSESSMENTS**
   - **IMPROVE AND TARGET MARKETING TO ATTRACT THE RIGHT COMPANIES**

Notes:
1) Prospective resources * industry perception of materiality & value creation; 2) Composite score of fiscal regime, local content & regulatory qualifiers. Assumes new PSC terms and regulations (e.g. those required to open onshore) will be agreed and implemented and any new local content requirements will remain attractive; (see “Resource Potential & National Priorities” section in full report for details of methodology)

Source: Rystad; Wood Mackenzie; WorldBank; UN CIP Index; Local Content Policies in the Oil and Gas Sector; World Economic Forum; Resource Governance Index; Comparative Assessment of the Federal Oil and Gas Fiscal Systems
Potential upstream revenue of $40bn up to 2040 and the added value benefits of a strong petroleum industry

**Forecast Scenarios to 2040**

**Production**
- *Kboe/d*
  - To date
  - High
  - Most likely
  - Low
- 2010 2015 2020 2025 2030 2035 2040

**Net Revenue to Timor-Leste**
- *USD million*
  - To date
  - High
  - Most likely
  - Low
- 2010 2015 2020 2025 2030 2035 2040

**Potential Maximum Revenue**
- Unlock development
  - $12 bn
- Attract new exploration investment
  - $18 bn
- Unlock new barrels from existing production
  - $1 bn (+$9bn existing)

**Added Value Extraction**
- Non-petroleum sector growth
- Local content growth
- TIMOR GAP participation
- Downstream sector growth

**Note:**
1) All forecasts are 5 year moving averages – see appendix for detailed inputs and assumptions; 2) High scenario, above ~$9bn from base production; 3) Not within the scope of this report

**Source:**
ANP Data; SBC analysis
POTENSIA MINERAIS IHA TIMOR LESTE
PROJETO LEI - Código Mineiro

20 CAPITULOS – 168 ARTIGOS – 3 ANEXOS

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<th>CAPÍTULO</th>
<th>TÍTULO</th>
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<td>Disposições Gerais</td>
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<td>II</td>
<td>Classificação de Minerais</td>
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<td>III</td>
<td>Atribuição de Licença de Prospecção e Pesquisa, Direitos Mineiros e Fases das Atividades Mineiras</td>
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<tr>
<td>IV</td>
<td>Programas de Trabalho e Orçamentos, Dados, Informações, Registos e Relatórios</td>
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<tr>
<td>V</td>
<td>Ocupação da Terra, Indemnização por Danos e Reassentamento de Comunidades Locais</td>
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<tr>
<td>VI</td>
<td>Regime Ambiental</td>
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<tr>
<td>VII</td>
<td>Responsabilidade e Obrigações em Matéria de Seguros</td>
</tr>
<tr>
<td>VIII</td>
<td>Saúde e Segurança</td>
</tr>
<tr>
<td>IX</td>
<td>Regime Laboral e Aprovisionamento de Bens e Serviços</td>
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<td>X</td>
<td>Transmissão de Direitos</td>
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<td>Comercialização</td>
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<td>XII</td>
<td>Cessação</td>
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<td>Royalty Mineiro</td>
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<td>XVIII</td>
<td>Registo Mineiro</td>
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<td>XIX</td>
<td>Transparência e Boas Práticas</td>
</tr>
<tr>
<td>XX</td>
<td>Disposições Finais e Transitórias</td>
</tr>
</tbody>
</table>
Provisions and Phases of Mining Activities

Including provisions regarding Health Safety and Environment, Local Content, Labor regime, Sanctions and Infractions, Mineral Registry, Transparency and Good Practices
Mineral Classification

- Metallic Minerals
- Gemstone Minerals
- Radioactive Minerals
- Industrial Minerals
- Rare Earth Minerals
- Coal
- Precious Metals
- Base Metals
- Construction Minerals
- Process Minerals
- Dimension and Ornamental Stones
Strategic Minerals

- Nation economic, energy security, and balance of trade;
- Hazardous Minerals which shall require a specific technical and mining aspect;
- Rarity;
- National defence and security; and
- To support the growth domestic manufacturing industries, more specifically in agriculture, housing and infrastructures industries.

Types and Participation to be defined by the Council Of Ministers

Source: Internet
Award of Prospecting License, Mineral Rights, and Mining Activities Phases

Mineral Rights
- Mineral Pass
- Mineral Permit
- License
- Artisanal Mining
- Industrial Minerals
- Others
INTEGRATED AIRBORNE GEOPHYSICAL SURVEY AND LIDAR DATA

- Magnetic Data
- EM
- Gravity and Gradiometry
- Radiometric Data
- Interpreted Geology Map
- Magnetic Data and EM
- Gravity Data
- Modeled Depth to Basement Surface
Airborne Magnetic and Radiometric
As part of this phase of acquisition these data would be interpreted and modelled to produce surficial geological maps and basin architecture maps that detail the basin(s) geometry and the primary structural controls.

Airborne Gravity
Airborne gravity provides a rapid, lower cost alternative to ground gravity acquisition over deep sedimentary basins.

Targeted Gravity Gradiometry and Electro Magnetic
Ground Validation survey
OBRIGADO BARAK!!!