The Governing Frameworks of the Energy Sector in Iraq

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Executive Training Program for Young Energy Leaders: Addressing Energy Challenges at Regional and Global Levels by Applying Common Rules and Good Governance Practices

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The Main Issues

P1: The Evolution of the Iraqi Governing Frameworks in Petroleum Sector
P2: INES, the Needs for BPS Revision, Sectoral harmonization & Revenue Management for Sustainable Development
P3: Iraq’ International Cooperation on Energy and Petroleum
P4: Concluding Remarks
Necessary Caveat: Different Governing Frameworks in Energy/Petroleum Sector

Petroleum Sector & Its Sub-Sectors
- Upstream
- Midstream
- Downstream

Power/Electricity Sector
- Petroleum-based Power Generation
- Hydroelectricity
- Renewable Energy (Solar & Wind)

Our focus!!

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P1: The Evolution of the Iraqi Governing Frameworks in Petroleum Sector

The Pyramid of Legal & Regulatory Frameworks

- Transitional mandatory frameworks
- The Constitution
- FOGL?
- MoO?
- INOC/IOC? ROCs
- LTSCs (MoO); PSAs (KRG)

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Two Distinct Petroleum Régimes

MoO: LTSC; Bidding Process (Ex., Ahdab)

KRG: PSCs; Direct Deals

Difficult with unclear prospect due to too much politicization, sensitivities and orientations.
Development Strategies for Upstream Petroleum: Gradual or Big Push

- **Gradual Strategy:**
  Focus on the biggest brown fields; capture their decline; increase production by 500kbd; use national effort with foreign EPC if needs be. Proposed by oil technocrats especially from SOC.

- **Big Push Strategy:**
  Maximum expansion of production capacities at a fast pace; grand opening of petroleum sector to IOCs; bidding rounds licensing using LTSCs. Proposed by the “new management” of the petroleum sector, thinking of making Iraq a “game changer”.

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## The Outcome: Concluded LTSCs

<table>
<thead>
<tr>
<th>Bid Round</th>
<th>O &amp; G Fields &amp; Exploration Blocks</th>
<th>CPPT (Mbd)</th>
<th>Proven Reserves (bbls)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BR1 (6 OFs)</td>
<td>B-OFs: R, Z, WQ1 &amp; Missan G: 3 OFs</td>
<td>7.335</td>
<td>33</td>
</tr>
<tr>
<td>BR2 (7 OFs)</td>
<td>G-OFs: Majnoon; WQ2; Halfaya; Garraf; Badra; Qaiyara &amp; Najma</td>
<td>4.765</td>
<td>33</td>
</tr>
<tr>
<td>Conver..</td>
<td>Al-Ahdab</td>
<td>0.2</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14 OFs:15 IOCs:12 Cs</strong></td>
<td><strong>12.3</strong></td>
<td><strong>67</strong></td>
</tr>
<tr>
<td>BR3 (3 GFs)</td>
<td>Green GF: Akkas; Siba; Mansuriya;</td>
<td>820 Mcfd</td>
<td>11.2 Tcf</td>
</tr>
<tr>
<td>BR4 (4 EBs)</td>
<td>OBs: B9; B10; B12. GB: B8.</td>
<td>XXX</td>
<td>XXX</td>
</tr>
</tbody>
</table>

* : at the time of bidding round

And more under consideration!?
Oil Export to Major Markets (%)
Export outlets (mbd)

**NAG:** 8.5
(5SPMs, BoT (1.6mbd) & KoT (max 350kbd))

**Syria:** 4.5
(Rehab1.25; new 1.25 L/m crude; 1.5 Hc)+ gas pipeline

**Turkey:** 1.6 (Upgrade K-C)
+ new oil and gas pipelines!

**Nabucco??**

**Jordan:** 10-15 kbd (Trucks)+
1mbd&250mcfd Zerga-Aqaba!

***************

**Egypt?**
**IIS gas pipeline?**
**IPSA- oil pipeline?**

---

**Source:** EIA, Platts
**Downstream Petroleum: Refining Capacity**

MoO Plan: Refining capacity (kbd-input)

<table>
<thead>
<tr>
<th>Year</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>575</td>
<td>640</td>
<td>680</td>
<td>700</td>
</tr>
</tbody>
</table>

Four new major refineries:
- Nassiriya (300 kbd)- $8bn;
- Missan (150 kbd)- $5bn;
- Kirkuk (150kbd)-$5bn;
- Karbala (140 kbd)-ca$5bn.

A possible fifth plant may process heavy, sour crude from the Najma and Qayara field.


In addition to these new capacities, the others to be renovated are Baiji, north of Baghdad, the Doura refinery in southern Baghdad and the Basra refinery in the south.

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P2: INES, BPS Revision, Sectoral Harmonization & Revenue Management for Sustainable Development

1mbd/C: $15 billion initial investment

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INES Prospect & Governance Structure

PMO
Approve strategic decision & allocate budget

INES-SC
Review progress & take action; manage risk proactively; ensure alliance between different ministries.

INES-PMU
Follow-up on objectives and action plans; escalate issues and risks; Monthly progress reports.

MoE

PTF

PIRC

MoO
OTF & GTF
O&G IRC

MoIM
LIsTF
LIsIRC

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Bilateral Cooperation Frameworks & Instruments

- MoO-NORAD (2011);
- MoO & USAID: MoU (2013);
- Iraq-USA: JCCE (2008 SFA)

Multilateral Cooperation Frameworks & Instruments

- ICI (not anymore);
- Iraq-EU: MoU-SPE (2010); JD (2011); PCA (2012);
  EUIEC (2012/3) (2014**);
- EITI as distinct framework
P-4 Concluding Remarks

- The success of development in Iraq’s petroleum sector is vital for Iraq and for global energy balance. However, this faces serious and formidable challenges.

- Domestic challenges (political stability and security situation; policy coherence and sound planning; Bureaucracy and program management; infrastructure and logistics);
  Regional challenges (determinants of landlocked-ness & geopolitical factors);
  International challenges (global energy balance; OPEC politics, and oil prices).

- Risk analysis based on Impacts and Likelihood would indicate the importance of domestic and regional challenges in the short-medium terms while international challenges in the medium-long terms.

- EITI experience shows that comprehensive and annual reporting on energy governance improves governance standard; and international cooperation plays critical role in this respect.

- Joining ECT is beneficial for Iraq that should be considered seriously, and ECS ought to take the lead and make initiative.

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The Constitutional Principles

Core Principles:
1- Ownership              2- Best Interest

FRP Management Principle

Promotional Principle

(FDI)
The Dysfunctional Package of Laws

- MoO Law 101 of 1976 and its amendments
- Law 84 of 1985 on Preservation of Hydrocarbon Wealth
- INOC Laws 123 of 1967 and its amendment by Law nr 130 of 1967

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Petroleum Sector & Its Sub-Sectors

Upstream

I- MoCs Phase- 2004/8


III- The conversion from PSC to Service Development and Production Contract

IV- Procedure for each Bid Round

V- Versions of the basic “Model” contract

VI- Other Types of Sub-Contracts

VII- The Outcome: Concluded LTSCs

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I- MoCs Phase- 2004/2008

Number: some 40 MoCs

Purpose:
- Joint technical studies;
- Training and development, and
- Technical consultancy.

IOCs cover all costs related to these MoCs.

From MoCs to TSCs; To be implemented by the IOCs during two years 2008/9

Focus:

1- First capture the production decline of the major oilfields (Rumaila, Zubair, WQ1, Missan fields and Kirkuk);
2- Then increase their production by 400-500 kb/d.

The Iraqi side pays for both the investment requirements and IOCs fees to achieve these targets.

The negotiation on the TSCs lasted from the last quarter of 2007 to mid-2008 without conclusion.

- MoO then reduced the duration of the TSCs from two to one year since, at that time, they would overlap with the timing of bid rounds.
- IOCs refused the one year’ period as been too short for such contracts.
- Accordingly, MoO abandoned the whole idea to focus on the bidding process.
III- The conversion from PSC to Service Development and Production Contract (AlAhdab)

- The old DPC/PSC was signed on 4 June 1997, approved by law, but frozen on 1 January 2000 due to inactivity on the field.

- MoU was signed on 23 June 2007 that led to the conversion to SDPC in Nov 2008.

- Law: abrogation of former law but without new law ratifying the new contract.
IV- Procedure for each Bid Round

1- Announcement of the offered gas, oilfields and exploration blocks;

2- Specify the parameters for IOCs pre-qualification (& process fee)

3- Announcement of the qualified IOCs;
   (120 IOCs and consortia participated in the qualification process)

4- Prepare a profile and data package for each offered filed, and sale such information to the interested qualified IOCs;

5- Hold workshops for the IOCs to discuss the data package, the draft of the model contract and review the bidding process and bidding parameters. These workshops are usually open for the media and attended by senior officials from the ministry. The last bid round was attended also by representatives of the local authorities of the related exploration blocks;
6- Announce the Final Text of the Contract & the Final Tender Protocol;

7- IOCs pay the “Participation Fee” (BR1)

8- All bidding events were held in Baghdad with full publicity, TV coverage and the bids are made, opened and announced in public with full competitiveness. Results of BR1

9- Each contract has to be approved by the Council of Ministers.

10- The “Signature Bonus”, if any, has to be paid within 30 days from notification by MoO that the cabinet has approved the contract.
V- Versions of the basic “Model” contract

I. Service Development and Production Contract-(Al-Ahdab);
II. Technical Service Contract (BR1)
III. Development and Production Service Contract- (BR2)
IV. Gas Development and Production Service Contract- (BR3)
V. Exploration Development and Production Service Contract- (BR4)
VI-Other Types of Sub-Contracts

**EPC: Engineering, Procurement and Construction**

Example 1: Within LTSC

«LUKOIL MID-EAST LIMITED»- WQ2 announces:

- Tender No. 16/2010 for EPC of Oil Gathering System, Central Process Facilities (CPF) and Water Supply System
- Tender No. 22/2010 for EPC of Export Pipeline
- Tender No. 23/2010 for EPC of Tank Farm at Tuba Terminal
- Tender No. No. 24/2010 for EPC of Power Plant, Distribution System & Gas Treatment Facilities

Example 2: Through MoO/SOC

Leighton Offshore’ EPC contract to purchase and install two 48-inch subsea pipelines from the Fao peninsula depots and three SPMs.

**FEED: Front-End Engineering and Design** (for Nassriya filed & Refinery)

**PMC: Project Management Consultancy contract** (for CSSF)

**O&M: Operations and Maintenance** (of four SPM)

**WDC: Well Drilling Contracts** (for new wells and workover)

**IR&M: Inspection, Repair and Maintenance** (Rumaila)
PROVEN RESERVES, TOTAL & INCREMENTAL PRODUCTION CAPACITY

14 Oilfields
67 bbls (58%)

1.7 mbd-CPC

12.3 mbd-TPC

10.6 mbd-IPC

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Annual Oil Export & Revenues (2009/2013)

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Iraq crude oil exports, 2012

- United States: 19%
- Europe: 20%
- China: 13%
- India: 19%
- South Korea: 11%
- Other Asia: 8%
- Other: 10%

Source: Lloyd's List Intelligence – APEX database
Oil Export Routes and Costs Assumptions

Potential Export Routes

Crude Oil Transportation Costs
USD / bbl

<table>
<thead>
<tr>
<th>Route</th>
<th>Pipeline Costs</th>
<th>Shipping Costs</th>
<th>Total Transport Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian Market</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Basra AG-Indian</td>
<td>($0.2)</td>
<td>($1.4)</td>
<td>($1.6)</td>
</tr>
<tr>
<td>7 Kirkuk AG-Indian</td>
<td>($0.5)</td>
<td>($1.4)</td>
<td>($1.9)</td>
</tr>
<tr>
<td>European Market</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Kirkuk Med-EU</td>
<td>($1.0)</td>
<td>($1.3)</td>
<td>($2.3)</td>
</tr>
<tr>
<td>8 Basra CEY-Med-EU</td>
<td>($1.3)</td>
<td>($1.3)</td>
<td>($2.6)</td>
</tr>
<tr>
<td>6 Basra Suez-Med-EU</td>
<td>($0.2)</td>
<td>($2.8)</td>
<td>($3.0)</td>
</tr>
<tr>
<td>USA Market</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Kirkuk Med-USA</td>
<td>($1.0)</td>
<td>($1.6)</td>
<td>($2.6)</td>
</tr>
<tr>
<td>5 Basra AG-CGH-USA</td>
<td>($0.2)</td>
<td>($2.7)</td>
<td>($2.9)</td>
</tr>
<tr>
<td>9 Basra CEY-Med-USA</td>
<td>($1.3)</td>
<td>($1.6)</td>
<td>($2.9)</td>
</tr>
<tr>
<td>4 Basra Suez-Med-USA</td>
<td>($0.2)</td>
<td>($3.0)</td>
<td>($3.2)</td>
</tr>
</tbody>
</table>

1) Shipping costs assumed as 5 year time charter of VLCC in addition to voyage costs and transit tolls
Source: MoO Data, Booz & Company analysis
Gas Utilization

BR1: BGC (HoA- Sept. 2008: BGC-May 2013)

BR2: Halfaya (Alkahla PS); LukOil (Proposes $4 billion petrochemical complex to utilize associated gas from WQ2); Alahdab (AlZubaidia PS).

Gas Flaring: “Iraq currently imports 500 metric tons to 1,000 tons of LPG a day, while it flares 4,000 tons daily” 17 May 2013, Bouaziz/Shell.
Upstream: Oil & Gas Production Scenarios

Given supply uncertainties, three oil and gas production scenarios were developed.

Oil and Gas Supply Scenarios

1. Oil Production Profiles
   - High Production
   - Medium Production
   - Low Production

2. Raw Gas Production Profiles
   - N/A Gas
   - High Production
   - Medium Production
   - Low Production

Notes:
- Figures correspond to raw gas produced in fields.
- Associated gas production is assumed to be the same in high, medium and low production scenarios.
- Non-associated gas production is assumed to be the same in high, medium and low production scenarios.

Sources:
- NOD data, Booz & Company analysis.
The energy sector will provide immediate and growing positive cash flow to the GoI even at low oil prices.
Revenue Management & Scenarios

Installed Capacity Utilization

- High
- Low

Global Demand on Oil

- High
- Low

- Honeymoon
- Delicate Balance
- Risky
- Nightmare

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# Conceptual “Situation/Strategy” Matrix

**Proactive NOT Reactive**

<table>
<thead>
<tr>
<th>Situation / Strategy components</th>
<th>Honeymoon</th>
<th>Delicate balance</th>
<th>Risky</th>
<th>Nightmare</th>
</tr>
</thead>
<tbody>
<tr>
<td>Situation Analysis/ Description</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impact / Results Assessment</td>
<td></td>
<td></td>
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<tr>
<td>Policy Options:</td>
<td></td>
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<tr>
<td>Annexes:</td>
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Institutional and Legal Frameworks:

(Governance, Transparency and Accountability)

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For a petroleum resource rich developing country, such as Iraq, sustainable development means the transformation of extracted depleting underground national asset (oil and gas) into over-ground national assets: human, physical and institutional capacities in an orderly, timely and cost effective manner.

The core of the transformation is structural diversification: Horizontal (across the national economy-sectoral and spatial) and Vertical (in petroleum sector along the value chain).