Pakistan: Energy Sector Appraisal

Background Paper Prepared by Sustainable Development Policy Institute

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1. Introduction and Background

The Economic Survey of Pakistan notes that during 2011-12 around USD 4.8 billion or 2% of gross domestic product (GDP) was lost due to power sector outages. This is a major factor behind Pakistan’s disappointing economic performance over the past 5 years, with GDP growth averaging under 3% (GoP 2013).

The suppressed tariffs and distortions created by untargeted subsidies in power, oil and gas sectors have resulted in recurrence of circular debt, political intervention in decisions regarding sector-specific allocation of fuel and breach of autonomy of regulatory authorities. Furthermore the multiplication of players at the government level, currently dealing with the energy governance, has also prevented serious private sector investors in taking any interest towards investing in a sector exhibiting growing demand and supply gap.

Pakistan traditionally relied on abundance of indigenous gas to generate a major chunk of its electric power. These gas supplies have long been provided to consumers at less than economic cost (Box 1). Even if the gas had to be subsidized there is little economic logic in giving preference to sectors already posting substantial profits e.g. fertilizer, cement and transport. The realization that subsidized gas supplies to transport should be reduced given this sector's already dominant share in oil consumption is very recent. This comes when gas shortages have led to closure of over 10000 production units (since 2009) in industrial and services sector and affected over a million jobs.

Between 1994 and 2012 we see that household sector has seen the largest increase in percentage share in electricity consumption. While to some extent this is attributed to growing population and increased electrification of peri-urban and rural areas, a key economic force behind this trend has again been artificially induced lower tariffs for household consumers vis-à-vis commodity producing or commercial services sectors of the economy (Tariq et al. 2009).

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1 We have evidence from Ahmed and Zeshan (2013) that indirect subsidies for agriculture (fertilizer subsidy in this case) had little impact on the welfare of small and medium farmers.
In what follows we start with a discussion on key challenges being faced by the energy sector. We try to limit our discussion to the key causes which include default on power bills, persistent demand for subsidies and lack of remedial measures to curb line losses and theft. This section will also discuss the increased time and cost associated with fragmented governance and resulting sluggish decision making processes in this sector. In Section 3 we unbundle the energy sector by various sources through which power is being produced in Pakistan. We discuss briefly the dynamics in hydro, oil, gas and coal sectors. Our key interest in this section will be to look at short to medium term challenges and opportunities. This in turn implies that we do not discuss here the development of longer term options like for example alternate or renewable energy. Section 4 then focuses on the relevance of new power policy and how far it manages to deliberate on the key causes of energy crisis. Before concluding we also briefly discuss reasons for moving towards a more robust energy efficiency and conservation framework in order to bring energy intensity down to sustainable levels.
2. Challenges Facing Energy Sector

In 2011 Planning Commission of Pakistan argued in the *Framework for Economic Growth* that even if no incremental investment could be attracted in the short term for alleviating power sector predicaments, better management of existing fiscal resources, assets and manpower could put the power sector back on track (GoP 2011). In the same spirit we discuss in this section the financial and operational issues curtailing the performance of power sector and resultantly slow redressal of circular debt.

The key challenges confronting this sector can be categorized into demand-supply gap, inefficiency and pilferage, and affordability. In 2012 the average demand-supply gap was observed at around 5000MW (31.8% of peak demand). Around 44% of power was generated through expensive thermal means. The transmission and distribution (T&D) losses stood at 25% and theft was valued at PKR 140 billion (Asif and Malik 2013). In rest of this section we limit ourselves to the key causes that help to explain some of these above mentioned challenges.

2.1 Unwillingness to Pay for Power

The first and foremost principle of exchange in economics is the ability and willingness to pay for a commodity. While we discuss the issue of ability later in this brief, here we establish the unwillingness at household and firm level to pay for the power consumed. Below we exhibit how the recoveries (accrued payments) of some very large power distribution companies have deteriorated over time. Their clients have not paid for the power consumed. In Hyderabad, for example, only 60% of the power supplied in 2012 was paid for – in a city of over 6.5 million people.

<table>
<thead>
<tr>
<th>DISCOs</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2010-11</th>
<th>2011-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>PESCO²</td>
<td>71%</td>
<td>67%</td>
<td>78%</td>
<td>68%</td>
</tr>
<tr>
<td>HESCO</td>
<td>77%</td>
<td>68%</td>
<td>59%</td>
<td>60%</td>
</tr>
<tr>
<td>QESCO</td>
<td>86%</td>
<td>80%</td>
<td>41%</td>
<td>36%</td>
</tr>
</tbody>
</table>

Source: DISCOs Performance Statistics Reports 2008-2012

The power distribution companies (DISCOs) are also unable to adopt the normal commercial practices in other countries of disconnecting customers for non-payment because of unclear legislation and political pressure. SDPI’s household-level Energy

² Peshawar Electric Supply Corporation (PESCO), Hyderabad Electric Supply Corporation (HESCO), and Quetta Electric Supply Corporation (QESCO).
Perceptions Survey 2013 also reveals little understanding among the masses that tariffs do not cover costs and that this is the main cause of power cuts and stoppages. Consumers want an end to load shedding, but most do not want to pay an amount that can curtail such power stoppages.

### 2.2 Untargeted and Distortive Subsidies

The fundamental rationale for subsidising electricity tariffs is to augment the paying capacity of the poorest of poor. However once subsidies are provided across the board, people start to demand them as their right and politicians feel compelled to maintain this distortive fiscal burden to win popularity.

The above chart illustrates the contradiction between the rationale for subsidies and actual practice. Only 0.3% of subsidies in 2012 went to the poorest consumers, usually called lifeline block. There is no economic or social logic for subsidising the other consumer categories. Most of the subsidies allowed are without a deadline (after which these transfers should either be terminated or gradually phased out).

<table>
<thead>
<tr>
<th>Subsidy by the government on power consumption (Rs/kW)</th>
<th>LESCO</th>
<th>GEPCO</th>
<th>FESCO</th>
<th>MEPCO</th>
<th>HESCO</th>
<th>SEPCO</th>
<th>QESCO</th>
<th>PESCO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Residential, &lt;700 units</td>
<td>0.4</td>
<td>1.4</td>
<td>1.4</td>
<td>2.9</td>
<td>3.9</td>
<td>3.9</td>
<td>1.4</td>
<td>4.4</td>
</tr>
<tr>
<td>2. Industrial, (66.132 KV &amp; above) - TOU (Peak)</td>
<td>2.1</td>
<td>2.1</td>
<td>2.1</td>
<td>3.1</td>
<td>6.6</td>
<td>6.6</td>
<td>4.0</td>
<td>7.1</td>
</tr>
<tr>
<td>3. Agricultural, 5 KW &amp; above - TOU (Peak)</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
<td>2.5</td>
<td>6.0</td>
<td>6.0</td>
<td>3.5</td>
<td>6.5</td>
</tr>
</tbody>
</table>

Source: Economic Survey of Pakistan, 2013

The table above also shows the wide variation in subsidies across sectors, regions and
consumption levels. Even residential consumers using above 600 units are being subsidised across most DISCOs. It is also a question mark as to how subsidy per kilowatt is determined. In case of residential consumers it ranges from around PKR 4 in case of HESCO to PKR 0.4 in case of LESCO.

Since 2005 the typical politician’s response to the power deficit has been to keep subsidising expenditures and not risk political office by transmitting full economic cost to consumers. Both power deficits and subsidies have grown in a similar pattern (figure below). Suppressed tariffs meant operators had insufficient funds (or incentive) to fully utilize existing capacity and adopt cheaper sources of generation.

Since 2005 the typical politician’s response to the power deficit has been to keep subsidising expenditures and not risk political office by transmitting full economic cost to consumers. Both power deficits and subsidies have grown in a similar pattern (figure below). Suppressed tariffs meant operators had insufficient funds (or incentive) to fully utilize existing capacity and adopt cheaper sources of generation.

![Figure 1 Power Deficit and Subsidies](source: NEPRA and Planning Commission of Pakistan 2013)

There has also been a lack of transparency in tariff setting and subsidy allocation. NEPRA officials’ autonomy has been breached on several occasions. Most notable was the intervention by the judicial system in Pakistan which ended up carving its own role in 2012 and intervened with orders that hampered implementation of NEPRA orders.

### 2.3 Administrative and Line Losses

It is unthinkable that responsible governments let incidents of theft and efficiency losses in generation, transmission and distribution (T&D) pass so easily. The figure below exhibits that these losses in case of Pakistan are greater than most of its neighbours in South Asia – some of whom are still LDCs.
In August 2013, the Secretary of Water and Power Ministry informed the Senate Standing Committee that Pakistan loses annually PKR 150 billion (USD 1.7 billion) in line losses and power theft. Until August 23770 cases of theft were registered and under trial, but only 3 cases were punished. Moreover, the fine imposed was under PKR 5000 in each case.

The above clearly indicates lacunae in the accountability mechanism. This requires amendments in Pakistan Penal Code so that there is certainty of effective punishment in cases of energy theft. SDPI's survey conducted in major business centres of 4 provinces indicates that the power sector defaulters are well known in the respondents' communities. Yet they are never reported, as there is a strong perception that there will be no effective trail on such instances of crime.

### 2.4 Institutional Fragmentation

We explore here the fragmented governance of energy sector in turn resulting in delayed implementation of reforms and increased transactions cost. We exhibit in figure below that apart from the core tasks of Ministry of Petroleum and Natural Resources where by it is responsible for ensuring availability of oil and gas, it has other ownership and management responsibilities for public sector enterprises under its jurisdiction. Interestingly when one looks at the website of Ministry of Privatization, several of these corporations can also be found on the privatization list. This points towards the need for a deeper analysis of public sector overhang and capacity mapping in energy sector ministries and departments.
The position is not very different in the Ministry of Water and Power whereby on several occasions there have been demands from various quarters that Distribution Companies (DISCOs) should be completely privatized. Recent data shows that even in case of Generation Companies (GENCOs) the efficiency level is far below that of the Independent Power Plants (IPPs). However GENCOs continue to remain alive because of an obsolete rule which directs the government only to provide imported oil on credit basis to GENCOs while dealing with IPPs on cash basis.

At the federal level the fragmentation and control over various productive units that should otherwise be managed by the private sector is not limited to the above mentioned two ministries. The figure below exhibits various other energy sector players at the federal and provincial levels. We see the research aspects of energy sector being undertaken by Ministry of Science and Technology. The regulatory bodies namely NEPRA and OGRA due to lack of promised autonomy end up reporting to the Prime Minister via Cabinet Division. We have seen in the past 5 years that waiting for the Prime Minister for vetting the regulatory orders in fact implied lessened accountability for the Ministry of Petroleum and...
Natural Resources and Ministry of Water and Power, given that both these ministries were also functionally reporting to the same Chief Executive of the federal government. This prompted the Supreme Court of Pakistan to take *suo moto* notice of this clear conflict of interest. However actions by Supreme Court further aggravated the matters in the energy sector and the uncertainty at the policy level.

Also included in the same figure are the provincial energy departments who need to be effectively empowered to manage at least the administrative losses and theft. This is particularly important in the aftermath of 18th Amendment. The devolved duties with the provinces now also allow them to manage power generation opportunities, energy-related levies and interact independently with private sector investors.

A more important question to ask is how the above mentioned federal and provincial players in the energy sector interact. While answering this we can establish at the outset that there has never been a meeting and reporting schedule towards coordinating energy sector on an emergency footing. Initially issues were taken on need basis to Economic Coordination Committee (ECC) meeting. The ECC could only forward recommendations to the Cabinet that use to be held after a lag time of 1 week. However once the supply demand gap in the energy sector greatly widened it was decided to resurrect the Cabinet Committee on Energy.

One of the key consequences of the above lack of coordination and fragmented decision
making can be seen in the table below, exhibiting key components of circular debt. More importantly in 2012, PKR 234 billion could have been saved had procedural delays, tariff determination issues, and delayed fuel price adjustments not occurred. The federal and provincial governments have also defaulted in their dues to the DISCOs. Total circular debt of PKR 872 billion in 2012 represents 4.3% of GDP at current prices.
## Circular Debt Growth from 2006 to 2012 – PKR Billions

### Factors in Circular Debt

<table>
<thead>
<tr>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Primary Causes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stock of Debt - Beginning of the Year</td>
<td>84.07</td>
<td>111.26</td>
<td>144.99</td>
<td>161.21</td>
<td>235.65</td>
<td>365.66</td>
</tr>
<tr>
<td><strong>2. Total Non-Collections (a)</strong></td>
<td>27.19</td>
<td>33.73</td>
<td>52.51</td>
<td>29.76</td>
<td>-24.74</td>
<td>81.26</td>
</tr>
<tr>
<td><strong>3. Sub-Total Tariff &amp; Subsidy Issues</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tariff Determination &amp; Notification Delay (b)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Fuel Price Adjustments (c)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>20.1</td>
</tr>
<tr>
<td>Difference Between DISCOs TDS claims Vs. Actual Disbursed (d)</td>
<td>N/A</td>
<td>N/A</td>
<td>-36.29</td>
<td>39.66</td>
<td>134.84</td>
<td>48.68</td>
</tr>
<tr>
<td>Difference Between DISCOs NEPRA Allowed Vs. Actual T&amp;D Losses (e)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>5.02</td>
<td>19.91</td>
<td>21.94</td>
</tr>
<tr>
<td><strong>3. Sub-Total Tariff &amp; Subsidy Issues</strong></td>
<td>N/A</td>
<td>N/A</td>
<td>-36.29</td>
<td>44.68</td>
<td>154.75</td>
<td>90.62</td>
</tr>
<tr>
<td><strong>Total Circular Debt (As of Year End) 4=1+2+3</strong></td>
<td>111.26</td>
<td>144.99</td>
<td>161.21</td>
<td>235.65</td>
<td>365.66</td>
<td>537.54</td>
</tr>
</tbody>
</table>

Source: GoP (2013). Other sub-sources mentioned below.

- b: USAID PDP Analysis based on data from NEPRA's DISCO tariff determination 2012 (Data only available for the years shown)
- c: Data from MoWP - Tariff Cell (Data only available for the 2 years shown)
- d: Chief Engineer's Office - MWP
- e: USAID PDP Analysis
3. Unbundling the Energy Sector

In this section we split our analysis by various energy sub-sectors and look into challenges related to hydel, oil, gas and coal. While each requires a dedicated action plan, they feed into the same objective of energy security and sustainability. We have only touched upon these energy sub-sectors briefly, however greater details can be seen in GoP (2011) and ADB (2010). Explaining the focus of this paper at the start we had committed to limit ourselves to short and medium term options in the energy sector. However given the substantial share of hydel in the power sector's installed capacity we start with this sub-sector first, albeit acknowledging that this is a longer term option.

3.1 Hydel Sector

Pakistan has a potential of 60,000MW hydel generation while it currently generates only 6700MW. Hydel sector is providing installed capacity of over 6500 MW to WAPDA and the rest to IPPs. Over the past 2 decades, Pakistan has added less than 25% to its hydropower base (Chattha 2013). Out of the 5 major hydro power sources (Tarbela, Mangla, Warsak, Chashma and Ghazi Barotha), the capacity of Tarbela, Mangla and Chasma is on the decline due to sedimentation in their reservoirs.

The projects in pipeline include Bhasha dam which could take a decade to become operational. Similarly the delay in Neelam-Jehlum project has resulted in a cost escalation of 300%. Other mega projects like Boonji and Dasu in Khyber Pakhtunkhwa are still at feasibility stage.

Owning to matters of inter-provincial coordination and substantial capital cost associated with large Hydel projects, there have been suggestions to focus more on development of micro hydel projects and increasing storage capacity of existing hydro power sources (PEF 2013).

The National Power Policy 2013 claims that smaller hydel projects totalling 338MW are expected to be completed by February 2015. Similarly two additional smaller projects (Patrind and Gulpur) having capacity of 247MW will be completed by December 2017. By the same year, power policy envisages that Tarbela expansion will be able to add an additional 1910MW.

The timely completion of above mentioned projects will require external help. Therefore the policy hints at three possible sources of support. First foreign investment will be sought for medium sized run of the river hydel projects. Second on-going hydel power projects facing deficiency of funds will be positioned for privatization. Finally Multilateral agencies will be invited to partner in larger hydel projects.

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3 This option requires careful evaluation as there are instances where run of the river projects have suffered, once the river stream dried due to changing climatic conditions.
3.2 Oil and Gas

The import of oil by Pakistan witnessed an increase from USD 12.5 to 14 billion during fiscal year 2012. Oil alone is responsible for 1/3rd of Pakistan’s energy needs out of which 1/4th is utilized in the power sector. The petroleum crude and products contributed to 35.4% of total imports of Pakistan during 2012-13. The government has come up with a liberal incentives regime under the Petroleum Exploration and Development Policy, however investment in this sector still remains sluggish. The lack of competition implies that the big 3 namely Pakistan State Oil, Pakistan Petroleum Limited, and Oil and Gas Development Company Limited, continue to dominate the market. These entities have presence of government officials on their board and sometimes in their management that further strengthens the red tape and its associated pitfalls.

It will not be an exaggeration to say that the government still continues to engineer consumption patterns in gas sector. Starting from the Natural Gas Allocation and Management Policy 2006, the government has been facilitating preferential (subsidized) and priority (allocation) gas to fertilizer, transport, captive power plants for export industries and cement sectors. The policy struggles to provide any economic justification for such behaviour on part of the government. It is noteworthy however that the post-2006 governments have continued preferential and priority allowance in some way or the other with more sectors being added to the list.

Oil and gas pricing regime have also remained a disincentive for the foreign investors. This is also one area that neutralizes the other encouraging factors in the overall investment regime. The 1997 Petroleum Policy has lessons to offer and it has been recently recommended that in line with 1997 policy the well head gas pricing should be based on 70% of a basket of imported crude price (PEF 2013).

It is worth noting here that a study by Pakistan Petroleum Limited reveals that investment in tight gas, shale gas and 100TCF recoverable reserves can become available merely through improvements in the pricing regime for natural gas. The potential of off-shore gas has yet to be explored.

Finally the foreign investors have cited security situation, non-transparent pricing and loose legislation as key impediments for their entry in oil and gas sectors. There are instances in these sectors, particularly with reference to public private partnerships where foreign investors had to enter in to litigation in the initial phase of their investment in Pakistan. These investors are of the view that local judicial system is weak to fully implement the legislative cover provided to foreign investment. Similarly the materialization of sovereign guarantees in their view can take longer than anticipated in the agreement. We now discuss three key policy reforms for prudent management of gas resources.

3.2.1 Market-based Pricing
Oil and Gas Regulatory Authority (OGRA) has repeatedly been challenged by the civil society organizations to provide a long-term vision as an independent regulator, transition to a market-based price and resist government’s intervention in both pricing and allocations to various sectors in the economy. The failure to correct the pricing mechanism remains the most important investor repellent.

One of the key reasons for suppressed pricing in case of gas is the provision of cross subsidies to select sectors like fertilizer and cement. This lower than economic pricing for any sector, provides an incentive for inefficient use at the consumer end. In the short term it is suggested that even if gas subsidies have to be sustained, these should only be allowed for the lifeline block. For example a direct subsidy to lifeline fertilizer consumers will be less distortive and allow for uniformity of sale price across gas consumers. In the longer term however a transparent mechanism for pricing gas should be based on charging full economic cost of local and imported sources and uniform pricing for all types of consumers.

3.2.2 Reducing Government Footprint in Gas Sector

The operations of two main public sector entities in gas sector SNGPL and SSGCL have rather been run like a natural monopoly. The lack of competition has resulted in production inefficiencies, failure to secure return on existing assets and lack of investment required for expansion of transmission network. It is due to the same reason that Unaccounted for gas (UFG) remains high at 12%. A 1% of UFG implies an annual loss of around USD 2.5 billion.

In the short term it is suggested that an arms length compensation mechanism should be introduced for gas utilities which should also be linked with the efficiency levels observed at the utilities. In the medium to longer run however one could follow the example of power sector distribution where a single entity may be constituted for bulk gas transmission (NTDC in case of power sector) and there should be several gas distribution area-wise companies selected through competitive bidding of licences (Sattar 2013).

3.2.3 Revisiting LNG Policies

Despite liberal liquefied natural gas (LNG) policies of 2006 and 2011 a growth in its import has not been observed. This is attributed to the circular debt that prevents the government to provide financial guarantees to potential foreign suppliers. These suppliers are also being pursued by west and East Asian buyers that allow greater contract certainty and flexibilities.

Going forward a dedicated LNG unit needs to be established at the Ministry of Petroleum and Natural Resources that should only focus on pursuing LNG purchases. The gas utilities should competitively bid for the imported fuel. The same utilities should be encouraged to
strengthen the pipeline network so that LNG imports from the South can be transported. Finally and following the example in some other Asian countries, LNG suppliers should be engaged in vertical integration whereby they should be allowed to hold joint ownership of gas utilities or IPPs.

3.3 Coal Sector

This is traditionally the most widely used fuel for energy across the world. In Pakistan’s neighbourhood, China and India produce 63 and 47% of their electricity from coal. Coal’s share in Pakistan’s energy mix remains dismally low despite estimated reserves being termed second largest in the world at 187 billion tons.

The key reasons cited in PEF (2013) for non-development of Thar coal include inappropriate handling of prospective investment proposals, disagreements between federal and provincial governments (on matters of ownership, control and pricing), lack of project implementation and technical capacity in the public sector.

Going forward some of the issues that will continue to hurt the development of coal sector in future include: lack of integrated mining and power policy, uncertain tariff regime for coal-fired power generation, continued circular debt in power sector implying reluctance of foreign investors to invest in coal mining and power generation, land acquisition and resettlement plan for Thar Coal fields still not in place.

3.3.1 Development of Thar Coal

Thar coal is only a medium to long term option for Pakistan if existing institutional bottlenecks can be resolved. The public private partnership between Sindh Government and Engro Corporation has resulted in initiation of 600MW coal-fired electricity project. We also see that there is a dedicated budget line item in fiscal year 2013-14 budget of the Government of Sindh that focuses on development expenditure towards Thar Coal’s infrastructure development. The Federal government too has allocated PKR 950 million in the same year towards construction of transmission network from Thar to Matiari.

The private investors are however still shy from pledging their future investments to Thar coal development. They have cited lack of clarity regarding upfront tariff, assured off-take of coal-fired power and possibility of future circular debt as key reasons curtailing their decisions.

We recommend that the Provincial Government of Sindh may convene a more vibrant oversight committee with high-level representation from Federal Government to at least complete the transmission infrastructure which in turn will send a signal to private investors about the priority attached to Thar coal by both tiers of government.
3.3.2 Transparency in Tariff Management

NEPRA in consultation with stakeholders (as required by law) will need to finalize the upfront tariff for local and imported coal-fired power plants. While it is important that the tariff should cover full economic cost however NEPRA can also build-in incentivized tariff facility (by altering its own transmission and distribution margin) according to the socio-economic benefits (e.g. number of local jobs created) and environmental impact of the project. The various investment options include coal mining, integrated coal and power production, mine mouth power project, coal gasification, and coal to liquid projects (PPIB 2008, Khan 2012).
4. How Relevant is New Power Policy?

It is common to hear demands for cheaper and more sustainable power in the country. What is not properly understood is that any pursuit of cheaper energy requires plugging inefficiencies in the supply chain and bringing competition in power market. In the flow chart below we exhibit the 3 desired pillars of financial rehabilitation and fiscal prudence in the power sector. These fall under efficiency, competition and sustainability. The neglect of the first two is essentially responsible for the frequent recurrence of circular debt in this sector. This is precisely why sequencing of reforms becomes so important.

Source: Adapted from National Power Policy (2013) and SDPI (2012)

In this section we will limit our analysis of the new power policy to eliminating subsidies, curbing theft, creating competition in power generation, and energy conservation. We believe that even with no incremental investment in the energy sector (at least in the short term) and minimal legislative changes the demand-supply gaps in this sector can be brought down to pre-2007 levels.
Tariffs and subsidies: the power policy recognizes that subsidies should only benefit the poorest of the poor. The definition of a poor consumer is someone utilizing less than 200 units of electricity a month. Globally, ‘lifeline blocks’ are typically no more than 100 units a month. We believe that this ceiling is still high and should be lowered. Similarly, there is no justification for subsidising commercial, industrial and bulk users. The policy currently aims to phase out subsidies over 3 years. Given the heavy fiscal cost of subsidies we recommend that all subsidies (including hidden and cross subsidies) - except perhaps a 100 unit lifeline block - should be phased out over the next 12 months. Given the unsustainable fiscal deficit levels, IMF has already desired an immediate end to these subsidies.

It is also important to understand the incentives of buyers and sellers. A more effective method of protecting the poor than subsidizing items like electricity and wheat – without distorting market functioning – is to provide them (and only them) with cash transfers. Well-functioning targeting mechanisms have already been developed through Benazir Income Support Program (e.g. poverty scorecard database).

Curbing theft: Unaccounted-for-gas controls should be enforced and the saved gas diverted to the power sector. The policy notes that just a 10% diversion can produce an extra 2000MW.

Current transmission losses of 3.6% are higher than the NEPRA allowed losses of 2.5%. This immediately calls for introducing performance contracts for grid stations under National Transmission and Dispatch Company.

At the DISCOs level as well, the power policy aims for a similar mechanism of performance contracts aimed at increasing accountability of heads of DISCOs. It is further recommended that such a contract should have specific clauses on reduction in distribution losses and full collection of receivables from the consumers.

Competing for fuel allocation: The allocation of fuel to generation companies (GENCOs) should be linked with their efficiency levels. If the IPPs are better performing in efficiency terms then fuel allocation may be in favour of IPPs vis-à-vis GENCOs. According to Ministry of Water and Power’s own estimates a 4000mtoe shift from GENCOs to IPPs will save PKR 77 billion annually. The current generation comparison reveals that PKR 13 billion per month for GENCOs allows production of 650 MW and only PKR 10 million per month in case of IPPs produces 1150 MW.

Energy Conservation: In 2007 the primary energy consumption per unit of GDP in Pakistan stood at 20,000 BTU while the world average was 10,000 BTU. The use of obsolete technology in Pakistan’s energy generation, inefficient household appliances and transport sector machinery, and end-consumer leakages are responsible for record high energy intensity in Pakistan.

Currently at the macro-level there is no dedicated legislation on this subject. ENERCON by its mandate is supposed to implement energy efficiency and conservation measures.
However the same organization also has regulatory powers. There is also week coordination with other two important players in ensuring energy efficiency namely Pakistan Standards and Quality Control Authority (PSQCA) and Pakistan Council of Scientific and Industrial Research (PCSIR). Product specific energy efficiency and conservation codes and standards have also not been launched. The draft Pakistan Building Code lies pending with Pakistan Engineering Council.

It is now hoped that the current government will expedite the Pakistan Energy Efficiency and Conservation Bill. The scope of this bill should include: constituting a high-level governing council to oversee efficiency and conservation measures, provide an environment whereby gaps in policy, institutional and regulatory regime can be narrowed; and clear mandates of institutions to provide and regularly update product codes, standards, energy reporting, labelling, testing and audits, compliance and related fines and incentives.

While the above mentioned efficiency measures can become the responsibility of ENERCON and provincial environmental protection departments, however an autonomous regulatory body will need to be constituted which should have the capacity to undertake energy processes testing in line with global standards.

In the above proposed bill, the implementation of Pakistan Building Code, standards and labels should primarily be the responsibility of provincial governments given that a detailed data of buildings and related infrastructure is already available with various energy and environment sector departments.

5. Way Forward

The cost of producing power is high in Pakistan. However it is essential to understand that this cost is not going to come down if consumers are not paying a price that covers generation cost, governments continue with subsidies and there is no clampdown on power and gas theft. Apart from the private commercial default, the federal and provincial governments have also defaulted on their dues to DISCOs.

We also argue that a fragmented governance structure with embedded rent seeking across the supply chain is hampering energy sector’s service delivery. Some specific policy recommendations in this position paper are summarized below:

**Short to Medium Term Measures**

- Gradually allow full economic cost of power to be transferred to consumers (except the lifeline block)
• Eliminating untargeted, hidden and cross subsidies. Maintain only targeted subsidies for lifeline block.
• Reducing the pilferages in oil, gas and power sectors
• Signing performance contracts at generation, transmission and distribution levels
• Bringing about transparency through real time information regarding allocation of fuel to GENCOs and IPPs. Both should compete for fuel depending upon their efficiency levels.

Longer Term Measures

• The ongoing low cost energy sector projects may be completed
• Address the legislative lacunas in the execution of public private partnership projects particularly in the coal and hydro sectors.
• In the post 18th Amendment milieu specific responsibilities should be assumed by the provincial governments in order to curb line losses and theft

Interventions by the Civil Society

• We suggest the use of social accountability tools (Ringold et al. 2011) whereby local communities and business chambers can hold XEN-level officials in the DISCOs responsible for inefficiencies and theft at the local level. The community groups interviewed during our survey have a fair idea of the extent of theft taking place. In order to ensure that those paying their dues do not face unscheduled load shedding it is important that such demand-side accountability mechanisms should be adopted.
• The local area civil society organizations can act as the secretariat for this effort. By local area we imply for example the catchment area of a single DISCO. In the first phase a social accountability tool such as citizen’s report card may be used to document the challenges faced by producers and consumers as clients. This scoping exercise will also document through citizen’s own responses if any local area coping strategies have been developed by communities or businesses.
• In the second phase consumer associations and business chambers should lead the effort of framing clear policy advice for energy security in their district and develop a mechanism to follow up this policy advice with the administrators. Usually the follow up work is done by social accountability committees which are formed at local areas. Finally after a certain time period another round of citizen’s report card should reveal if the executive or legislative branch of the government has responded and on what specific reforms. The clients can quickly remodel their approach to social accountability if they feel that government’s response has not been satisfactory.
6. References


