No Magic Wand for Energy Sector Solutions which Require Patience

a. Sector is venerable to shocks due to international events
b. Large change management projects have to start somewhere.
c. Status quo or ostrich approach is not an option anymore
d. Damned if you do, damned if you don't.

1. Encourage Investment in Sector, Build Confidence of IPPs and Consumer Confidence, Inculcate Learning and Transparency in Contracts Necessitates Corrective Measures

a. Undertake Operational and Efficiency Analysis
    - Present utilization factor, identify reasons and limitations, suggest measures to increase utilization factor
    - Determine impact
        - Capacity payments around Rs 18/kwh are small compared to taxes (40-45% of the bill) becoming massive circular debt portion, rising T&D losses, thefts, and system/grid inefficiencies and losses of Discos, all have been added to the electricity bill today.
    - Evaluate
        - Whether China has in fact stopped charging interest cost since FY23 till FY25, while NEPRA is still making it part of the tariff.
    - Quantum of benefit to GOP as itself has more than 50% direct stake in IPPs, especially under CPEC, and recipient of most of the capacity payments.
        - Power sector annual revenue requirement of power sector is Rs 4 tr (generation Rs 3.3 tr, transmission Rs 175 bn, 10 Discos Rs 500 bni) and almost 80% of investments and assets are of GoP's owned entities.
b. Forensic Review
    - Confirmation of Compliance with Commercial Terms of PPA; ROE, Capex, IRR, Storage and payment for Fuel
    - Review of Financing Terms and Loan Terms in PPA vs Actual
    - Review fairness in obtaining least cost Coal procurement process and corrective steps
c. Contracting Options
    - Identify opportunity and approach to increase Debt Tenor and Revision in PPAs
    - Status of implementation of previous negotiated agreement
    - Undertake working of IPPs Termination Cost versus Cumulative Capacity Payment till expiry of Term and review past exercise undertaken, if any
        - IPPs debt reprofiling to longer tenure.

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        - Option of partial deferred payment may be negotiated for causing reduction in capacity charge.
        - And certain low in dispatch plants termination and payment.
    - GoP negotiate with itself as second round (first local IPPs already negotiated under MA report)

d. Caution and Prudence
    - Per draft IGCEP capacity of $66 billion and TSEP $10 billion are needed for GOP investments or under P3 in next 10 years
    - China was invited by us to invest under the policy and protected returns were offered to all, and not just to China. They came when most denied to invest in Pakistan.
    - Plants setup under CPEC and other IPPs were front-loaded, like their loans payoffs are in first 10 years compared to 25-40 years of their life.
    - Reko Diq shock was enough to wake up from breaching Agreements.
        - Emotional steps with IPP, the shock would be severe when received from London Arbitration.
        - In 2000, a number of companies applied for IPP LOI but were rejected since Pakistan had so-called surplus. Then, we experienced massive load shedding from 2005 till about 2016, even 20 hours having impact on investment and GDP. A number of textile companies left for BD.
        - We may see the same, 2027 onward and will experience massive load shedding, again joblessness and low GDP.
        - In every country, there are power plants that would run from 0 to 10% only and it is a norm to get capacity payments.

2. Undertake Steps for Reduction in Tariff and Performance Linkage

Immediate

a. *NEPRA*
- Expiring PPAs be only extended under "no electricity, no payment" model
- Upfront tariff policy in 2005 and extended in 2007 during Musharraf tenure be amended with new PPAs only on competitive bidding
- Own generation approval pricing be lower than vs grid
- Targets for bill recovery and T&D losses be based on actual
- No cross subsidy amongst DISCOs; evolve competition
- Net metering tariff be based on 4/5 year payback; limit capacity to sanctioned load; adjust excess generation over one month to increase battery storage capacity
- Deferment on payment for K2-K3 with Rs. 1.84 per kWh fuel cost, which constitutes a significant portion of capacity charges, for two years is pending due to accrual of interest payments for the deferred payment be expedited.

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b. *CPPA-G and PPIB*
New capacity induction only upon increase in utilization factor to 60%; implement measures to enhance operational efficiency of power plants and minimize part load operation
c. *DISCOs*
   - Strict Time Lines for removal of constraints
   - Initiate Capacity building in management and execution of projects
   - Merit order be followed
d. *MoE and MoF*
   - "Free units" perk be part of total remuneration with actual payment against bill by consumer
   - Bill averaging to facilitate protected consumer's cash flow
   - Minimum tax on DISCO be removed
e. *MoMA*
LNG and coal port charges reduction; Additional 'one' time fee adjusted against EPP/CPP; one time ~$100m benefit or shut inefficient generation
f. *MoFinance*
Subsidy be paid directly to protected recipient and only under budget allocation, recipient undergo skill development program and industry incentive be linked to export performance
g. *MoIndustries*
Ensure live able wages to reduce the 25m residential consumers

Short Term

a. *MoFinance*
   - Improve optics of direct vs indirect tax collection through electricity bills
   - Reduction in indirect taxes of ~30% in bill or Rs 37-44 per unit add ons
   - Allowing adjustment in WHT, income tax, sales tax or offer a rebate %
b. *MoE Power*
   - Accountability of DISCO and NTDC management teams in place
   - Shift in peak hours for residential and EV consumers
   - Increase peak hour tariff for commercial consumers and reduce for residential

Medium Term

a. *NEPRA*
   - No tariff cross subsidy with one uniform tariff charged across the country
   - Liberalization and deregulation of sector with Govt out of Power business provided a strong regulator is operative
   - Expedite multi-buyer/seller market setup
   - FCA be determined to avoid monthly determinations and instead give credit to consumer

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b. MoFinance

- Conversion of imported coal plants coal projects (in Sahiwal, Port Qasim, and Hub) to Thar coal requires capex local funding by SECMC and Project Developers with alternate funding from China of USD 50m. The transition could save Pakistan more than Rs200 bn a year in imports, translating to a decrease of as much as Rs2.5 per unit in the price of electricity.

c. MoEnergy

- Increasing demand by industry and ensuring conservation by all users with integrated planning and accountability of measures will contribute in reducing capacity payments and imported fuel bill
  - Electricity consumption has dropped 7-9pc in '23 and 2% in 2024.
  - The IGCEP be based on projected scenarios till end of this decadeStart to deliver only electrons to residence
  - Residences and captive be offered LNG instead of LPG and indigenous gas be shifted to power and industry
  - Residences be offered LNG instead of LPG
- Effective energy conservation and efficient equipment development under lead of NEECA, PEC and EDB facilitating as a merged entity to catalyze the forced energy conservation taking place and reduce capacity addition
  - With addition of 3 solar projects (150MWs) and removal of Kot Addu power plant (1336MW) due expiry of PPA, installed capacity in FY 24 is of 40,281MW vs 41.460MW in FY 23
- 45% of our generation is from RLNG, Coal and Gas at Rs 17 per unit. Coal prices have declined to Rs 12.9 per unit due to 47% decline in international coal prices
  - The LNG price opener in 2026, use of local Thar Coal and gas for generation needs evaluation of impact on energy mix and procurement strategy
- Average fuel cost is down by 6% to Rs 8.8/Kwh vs Rs. 9.3Kwh in FY23 and reflects result of decision takers bringing a shift in the energy mix

d. Provincial Governments

Defaulter PMT areas be provided solar panels, AMR, Prepaid Meters

e. DISCOs

- Reduction in excess T&D and bill recovery losses that are contributing to escalation of circular debt with strong performance accountability
  - To alleviate the impact of heightened capacity charges, it is crucial to implement cost-reduction measures
- Reduce number of DISCOs thru merger within a province and later vertically integrate with generation companies
- Off grid development in rural tehsils be phased in over 5 years
  - 39 divisions with 166 districts at an average of 4 to 5 tehsils per district each having 8 to 12 union councils with 10 to 12 wards in each union council

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Long Term

a. *DISCOs*
   - Reduce interlink/interconnection constraints and increase HVDC utilization
   - Merge DISCOs and operate under public private public partnership with ownership of Federal, Provincial, Generation Companies, Consumers of the area and listed on PSX

b. *PPIB*
   - Deliver Energy mix having 10% percentage RE (hydel, wind and solar) with hydel pump storage, base load utilizing nuclear and indigenous gas/coal with share of imported gas and coal in plants with efficiency beyond 60%

c. *NEPRA*
   - Competitive generation necessitates CTBM be implemented with sincerity to build knowledge, confidence, gain experience with expiring PPAs and build competitive market using PMEX.
   - Develop real two-way "contracts for differences" where the generators get money from the public entity when prices are low, and pay back the difference between spot prices and their agreed price, when spot prices are high. In France and UK, this is providing a natural hedge to power prices and helps keep retail prices down.

d. *NTDC*

   Cater for renewables intermittency and navigate transition to a sustainable energy future
   - Energy Storage: Storing excess solar energy for evening use i.e pump storage using hydel and battery.
   - Grid Flexibility: Enhancing infrastructure for rapid demand changes.
   - Demand Response: Strategies to shift electricity use patterns
   - The transmission and distribution system capacity be 5-10% higher than peak demand load

e. *MoF*
   - Enable 94% domestic consumer using 200- 500 units to service bill
   - Manage CAD to below 0.2% of GDP to strengthen Rs vs USD

f. *MoIndustries*
   - Pilot project for hydrogen not as a fuel but for producing green ammonia to replace indigenous gas utilization in fertilizer industry without any subsidies and as a 3P initiative

g. MoE
   - Efforts are required and should be made towards operating coal and nuclear for base load demand
   - Coal is the new gold and new "secret" for investors to make money is " world's dirtiest fuel and is a disturbingly safe investment. "The Dawn of the New Solar Age", literally every smelter for solar panels has its own dedicated coal plant in China and that not one single panel is possible without carbon (the chemical element), heat, and electricity from coal (produced to over 80% in China) and in 2023 (again), coal's electricity

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generation increase was double that of solar in India and China... despite their dramatic solar capacity build out

- Headlines elude to something else that there is no way to make "honest" money with wind and solar driven by their low energy density + intermittency + short lifetime and the resulting high input energy and raw material requirement to make up for the total system to make solar and wind power "useful" for the customer i.e. provide electricity on demand 24/7/365 despite drastic overbuild, short duration energy storage (batteries?), long duration energy storage (hydrogen?) backup power stations (gas or coal?) and more complex and larger network integration and transmission infrastructure
- Facilitate EV Infrastructure Development from PSDP and Demand Creation

  - **Deregulated Segment**
  - Active facilitation by DISCOs in provision of connectivity and solarisation
  - **Measures**
  - TOU tariff over 24 hours ie peak, mid peak, off peak, super off peak
  - Tariff be at average cost of power and revised every quarter initially
  - Subsequently after 5years be categorized as industrial connection
  - NTDC with DISCOs monitor and rectify network constraints proactively

  - **Hand holding for 5 years of industry**
  - Investment incentives for 2 wheeler and 3 wheelers, Battery Manufacturers and EV assemblers/ manufacturers
  - Development of skills by technical institutes
  - **Measures**
  - *Structure*
  - Business/entrepreneurs be registered as a firm and obtain ST/NTN
  - Learning of present operators be shared publicly
  - *Service, Manufacturer, Assembler and Importer*
  - Self defined 7 year indigenization program performance would be reported in accounts published every year
  - 7 years tax holiday with 50% depreciation over 2 years
  - Cumulative import duty and taxes of 1% for first 3 years, 5% in following 2 years, 7.5% tax for following 2 years
  - Royalty based on 0.5% of revenue on lines of USF after end of 5years and made available for growth of EV infrastructure and managed by NEPRA
  - Subsequent to end of 7 years, all incentives will be withdrawn and 10% duty and 25% tax rate thereof till year10
  - Alternate to above: Subsidy for electric two-wheelers, Rs 75,000 per vehicle and Rs 250,000 for electric three wheelers. Both

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categories to receive incentives of Rs 5,000 per kilowatt-hour (kWh) for first 3 years only.
- No GST for first 3 years
- Tie sales of vehicle with battery and charging equipment by EV importers is discouraged
- Banks provide trade and project financing with equipment being collateral

- *Development of skills by technical institutes*
- Tied with BISP for 50 students in each Province and awarded Rs 50K per student per year on program qualification certification, pricing proposal and restricted to private sector institutes. The Rs100k fee loan will be recoverable by the institute over 2 years on behalf of BISP, upon graduation

- **EV Infrastructure at Motorways**
- Battery swapping
- Fast charging stations
- **Measures**
- *NHA*
- Facilitate at their rest areas by auctioning facility sites to non OMCs with deferred payment starting after 5 years of commissioning
- *District HQ*
- Undertake similar facilitation in other sites
- *DISCOs*
- Expeditiously deliver power to site selected and cost be recovered from bills but starting in 2 year with qtrly instalments over 5 years
- *OGRA and NEPRA*
- Not interfere and neither DC Office in licencing etc
- Charging stations are not to be considered as an electricity entity eg generation, distribution or transmission.
- And are to be allowed to set up a Shop Stop or Select or… including a rest area, food sale outlet, battery swap/sale and repair.
- *Explosive department*
- Role and other nonrelated approvals are to be limited to audit by DISCOs for a new connection and ensure ease of doing business and timeliness of approval.
- With DISCOs, expeditiously review requirement for addition of charging stations at retail out of OMCs as part of ease of doing business

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- **EV Infrastructure at Urban Centres**
  - Fast charging stations at Commercial, Hospitals and Offices
- **Measures**
- *Same as above in item 3*
- *Incentives*
  - Extended duration charging rate at residences. TOU be used to control abuse
  - Support the retirement of old, polluting vehicles by low income persons
  - Tax Credit for purchase or lease of Vehicles
  - Financial incentives to help cover costs of electrical panel upgrades that uses a 208 – 240-volt outlet
  - Rebate for individuals in low-income communities and non-urban areas who purchase battery charging equipment and batteries in their residence
  - Billing combined or individual with installation of another meter
  - Battery Distributors be encouraged to swap battery by their Principals
  - Reduced cost of insurance by lowering taxes on premium

- **Utilization of Infrastructure**
  - EV buses Motorway
  - 2 and 3 Wheelers in urban areas
- **Measures**
- Accessibility to financing over lifetime of vehicle
  - Workplace charging be encouraged via tax credits
  - Road/Toll tax exemption and free MTag for 2 years
  - One-time registration fee applicable on new vehicle purchase is waived off
  - Dedicated free parking with green number plate

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