



**Alliance for
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**To: Mr Fayaz Hussain Abbasi
Honorable Secretary
Sindh Energy Department**

Subject: ACJCE's Observations on Various Issues for Sindh Energy and Climate Planning

Respected Secretary Sahb and Team,

This brief has been developed by the Alliance for Climate Justice and Clean Energy (ACJCE) as a follow up to our earlier meeting with the Sindh Energy Department team in August 2023. ACJCE is a coalition of eight Pakistani civil society organizations comprising lawyers, academics, journalists, climate campaigners and policy professionals, specializing in environmental issues in the energy sector – particularly the transition away from fossil fuels and towards renewable sources. At our earlier consultative dialogue with your department, it was envisioned that ACJCE and the Department would pursue a practice of regular data sharing and dialogue to develop the culture of civil society consultation in energy planning. It was also decided that ACJCE would share its initial scoping of various Sindh specific issues in energy and climate policy that await further research and planning in the coming year. We deeply value your department's readiness to facilitate dialogue and evidence based discussions on issues pertinent to the intersections between energy and environment. It is hoped that the Sindh Energy Department will continue to support us and help us refine this scoping through data sharing and dialogue. With this support we will endeavor to identify further areas of priority and develop evidence based studies, reports, and resources for potential solutions via shared and collaborative research.

Our initial scoping has highlighted the following set of concerns requiring collective thinking, civil society consultations, and dialogue:

A. The Conversion of Imported Coal to Local Coal – the case of Jamshoro coal power plant

The recently published National Electricity Plan (2023-2027) envisions a shift from imported to local coal for various energy projects. Some initial steps have been proposed including a detailed feasibility study by PPIB which was due in October 2023. There are however, several challenges



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that are relevant for the future of Sindh's energy and ecological security— especially related to the Jamshoro coal power plant:

First, there are regulatory considerations involved in the potential changes to the structure, machinery, and fuel choice of the Jamshoro Power Plant. Owned by WAPDA's company, Jamshoro Power Company Limited, Unit#1 of the plant was funded by ADB and it was to produce 600 MW which was further expandable to 1200 MW. The power plant, as outlined in the Environmental Impact Assessment (EIA), was designed to operate on a combination of imported sub-bituminous coal and local lignite coal, with an 80-20 percentage ratio, respectively. According to the plan, the commissioning schedule for Unit#1 was to be December, 2022— with PC-1 approved, the Unit#1 was also declared as a committed project under IGCEP 2022-31. However, the power plant remains dormant despite having complete infrastructure in place. Some of the challenges include: a severe foreign exchange shortage and a governmental shift to reduce reliance on imported coal. Furthermore, due to consumer concerns and interests NEPRA also rejected the tariff for the unit#1 multiple times.

In this context, the proposed changes—details of which are provided below—require careful consideration. According to news reports, Pak Asia Investment holds major shares in KE and is interested not only in financing the wholesale conversion of Unit #1 to local coal but also in developing Unit #2. This would involve removing Unit #2 from the NTDC system and integrating it into KE, ultimately increasing electricity supply for Karachi. The proposals have been submitted to the Power Division and are pending consideration. However, this situation is intricate, involving various stakeholders, including ADB, NTDC, and WAPDA, not to mention the complex regulatory landscape surrounding privatization, optimization, national electricity plans, and the roles of the federation and provinces. Given that ADB financed Unit #1 and conducted the EIA for the Jamshoro Power Plant with its blended coal nature in mind, **converting Jamshoro to local coal requires a fresh EIA.** ADB's consideration of questions related to ETM, issues associated with local coal, its transportation method, greenhouse gas emissions, and water availability will be crucial, especially in light of ADB's freshly issued ESF expected early next year with enhanced guidelines for coal.

This transaction also involves NTDC. Detailed studies are required to assess the implications on electricity flows and the potential impacts on supply agreements with CPPA-G. Careful examination of these aspects is crucial to ensure the stability and integrity of the power system and to address any contractual considerations related to the supply agreements with CPPA-G. WAPDA, as the owner of JPCL, also plays a significant part. It remains unclear whether Pak Asia's proposed financing and the subsequent development of Unit #2 will have any impact on the ownership structure. Because any such change could trigger the privatization process-



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thereby requiring proper valuation, determination of rights and liabilities, assessment of societal impacts, and the mode of privatization (bidding or negotiated sale, subject to parties not expressing interest through bidding). **Sindh Energy Dept can separately assist by disclosing all relevant documents and details for detailed public study.**

Furthermore, while Pak Asia might be inclined to finance the modifications for Unit #1's transition to local coal, there is no clear indication of who will fund the development of Unit #2 and how this will be achieved. **Given the global shift away from coal, securing funds for such projects has become more challenging than usual.** This is evident in the lack of progress for Unit #2 of JPCL. Compounding the issue is the federation's reluctance to provide sovereign guarantees if KE proceeds with the project. Consequently, obtaining finances for KE, or at least on favorable terms, becomes doubly difficult. The terms and conditions of any loan secured will directly impact the tariff rate. Since consumer tariffs are uniform across Pakistan, the federation or province may end up covering the differential, adding an extra burden to an already strained sector. KE's power procurement program also reflects an external moratorium on coal financing.

Additionally, Pak Asia's involvement raises concerns about transparency, competition, and accountability due to its majority shares in K-Electric and its presence in the Thar mining business. The potential conflict of interest calls for careful consideration so that it does not become the classic case of regulatory capture. Moreover, **the substantial changes to Unit #1 necessitate a reevaluation of the project's environmental impact, requiring a fresh Environmental Impact Assessment (EIA) in light of the adverse effects of local coal in Thar.**

Furthermore, the procedural aspects of KE's proposal to develop Unit #2 or modify Unit #1 raises a range of concerns- **first, why JPCL was not subjected to and made part of the Power Acquisition Program for the next five years which KE submitted only recently.** The omission from the process outlined in the NEPRA (Electric Power Procurement) Regulations 2022 is unclear. Secondly, **it is also not clear whether or not the appropriation of JPCL by KE will extricate it from IGCEP and least cost conditionalities.** Regardless of the answer, Ironing out the practical details will require a lot of deliberation and cross-sectoral involvement. It is important for the Sindh Energy Department to disclose all such details and develop a sound assessment of the situation.

It goes without saying that the mindless and unplanned expansion in the past has caused tremendous loss to the national exchequer as well as the general public. Therefore, there is a strong need to take a break from such a framework and focus on the efficiency of the system. That said, section 4 (2) (b) of the Public Private Partnership Act mandates the Public Private



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Partnership Authority to ensure value for money for any PPP project, defining it as a "net positive gain to society." Therefore, the evaluation should encompass the project's impact on the environment, consumers, society, circular debt, and the energy sector. Additionally, the utilization factor of the old units of JPCL is notably low, making it a crucial factor for consideration. The shift from a take or pay to take and pay tariff structure has also been hit by obstacles and tariff rates have been uncompetitive in the past. A relevant excerpt from a report on JPCL is useful here:

“Retaining 880 MW inefficient power generation capacity that too on ‘Take or Pay’ basis with very low plant utilization factor is a huge burden on the power sector and economy of the country as well as on the electricity consumers’ of Pakistan. Therefore, considering all these factors, the Authority shifted the tariff of JPCL from ‘Take or Pay’ to ‘Take and Pay’ basis. **However, upon Writ Petition WP No. 3414/2021 the Honourable Islamabad High Court suspended the impugned decision of NEPRA. Due to lower utilization factor the per unit capacity charges for combined 1-4 units during FY 2021-22 remained Rs. 13.75/kWh which is quite high.**”

Finally, the transition and switch to local coal will necessitate the licensee to submit a Licensee Proposed Modification (LPM) to the Regulator and request amendments to the generation license. Both the original and modified generation licenses currently permit JPCL to operate the coal-fired power plants using a combination of imported and local coal, with an 80-20 percentage ratio, respectively. Since the decision to exclusively use local coal alters the tariff structure, applying for an LPM becomes indispensable, followed by the submission of a tariff determination petition. Given the above noted difficulties however, it is unlikely that the tariff will be a truly least cost option. **Given further that a feasibility report of an Energy Transition Mechanism (ETM) for the early retirement of coal is underway by the ADB – the initial funder of the Jamshoro project – there is a golden opportunity for the Sindh government to advocate the inclusion of the Jamshoro project into the ETM thereby resolving this list of concerns under one efficient solution. A detailed study is therefore required regarding the prudence of shifting and expanding Jamshoro on local coal and the possibility of having it included in the proposed ETM.**

B. Comprehensive Environmental and Social Audit and Upgrades to Monitoring and Mitigation Practices of Thar Coal Mining and Power Plants is Now Urgent



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As discussed in our previous meeting, there are widely documented environmental and social failures associated with the Thar coal mining and power projects. These include wide-scale degradation and heavy metal poisoning of the water table owing to faulty effluent water disposal practices and poorly regulated dewatering ponds at Gorano and Dukarchao. The situation has rendered a number of large villages unlivable and their water resources are now toxic and undrinkable. Studies have also demonstrated a growing list of ecological hazards associated with air quality and soil degradation threatening not only human life but also the biodiversity of the Thar desert as a whole. Observations by locals on unexpected climatic and weather system impacts such as increased lightning and abnormal cloud and rain patterns were also shared at our previous meeting. Ongoing concerns with inadequate and uneven compensation for land, and failures to follow the resettlement and rehabilitation policies and best practices in restitution also await solutions.

In our consultation it was decided by the respected Secretary Sahb **that a comprehensive assessment of the situation would be conducted and a report shared by the energy department on a priority basis. A plan for enhanced monitoring and mitigation protocols was also discussed. It was further agreed that clarity would be sought to ensure that any affectees under further acquisition of land or displacement of people due to expansion of mining or other operation be covered under the new Sindh Resettlement and Rehabilitation Policy.** We have collected a number of relevant studies and findings on the current situation on the ground which we are sharing separately with your team. We have also compiled a list of relevant best practices for ameliorating the present situation and would be happy to provide our written comments on whatever report may have been prepared by the Department in this regard.

C. The Proposed Inclusion of Hydropower into the Definition of Renewables under the recent National Electricity Plan Raises Concerns for Sindh: A National Level Consensus Policy on Hydropower is Required

The National Electricity Plan (2023-2027) envisions a revised generation policy framework to be developed pursuant to Section 5.1.9 of the National Electricity Policy. Under this expected framework, all hydel generation are proposed to be included in the definition of renewable energy. **This intended shift is blatantly out of sync with the Alternative and Renewable Energy Policy (AREP) which explicitly excludes hydropower from the definition of renewables. The AREP envisioned a separate policy for hydropower which is yet to see the**



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light of day. It bears reminding that one of the Chief Minister of Sindh's key objections to the IGCEP 2021 in a dissenting note No PS/CS/83/2021, was that it was amending the AREP through the backdoor by attempting to include hydropower as a renewable source. In the said dissenting note, the Chief Secretary noted that the CCI was not adequately briefed and misled on the issue.

The most recent evidence on hydropower indicates that large hydropower projects are especially unsuitable for Pakistan's climate risk profile being particularly prone to increased flooding risks and destructive for the ecologies of the lower riparian province like Sindh. Aside from high social and security costs, large hydropower is also linked to depletion of water resources and coastal erosion. In addition, the latest research confirms that the planned hydropower projects under the existing IGCEP are untenable on economic and technical grounds. There are also several questions related to the misalignment of this hydro centered expansion with Pakistan's Adaptation Plan and with the emergent global consensus around the protection of water ecosystems at the COP 27.

Given this situation and given that any bilateral and multilateral funding for future energy projects will have to comply with the National Adaptation Plan and C-PIMA standards under the IMF as well as enhanced WBG and ADB standards related to climate-risky investments, it is imperative that a national consensus around hydropower and a separate policy for its pursuit be urgently developed. We believe that Sindh province as the key stakeholder in this regard can lead this deliberation process. Province wide civil society dialogues and consultations would be a welcome first step in this direction.

D. Civil Society Consultation on Coal to Gas Policy and Report on Global Best Practices is Needed

In our previous meeting the respected Secretary Sahb stated that a draft of the comprehensive feasibility report on the proposed coal to gas conversion planned by the Sindh Energy Department would be ready by November and available for sharing with us for input. **We request access to the report on Coal to Gas and Coal to Liquid policy so we may formulate our input for evaluating and strengthening the proposed plans and clarifying their implications viz Pakistan's NDC commitments, donor requirements, and changing global frameworks on environmental standards and policies.**



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E. Just Transition Policy for Solar and Wind Projects is needed to Maximize the Potential and Benefits of RE

Recent hearings by NEPRA regarding solar projects in Sindh have raised a number of concerns that touch on issues of just transition. For instance, for solar projects falling under the Sindh Solar Energy Project (which is a World Bank Project), attract a number of social and ecological safeguards in addition to local standards. As environment category B projects, the World Bank itself mandates a further preparation of the Environmental and Social Management Plan(ESMP) for the location site which can help to identify, evaluate and prevent potential environmental impacts and identify mitigation measures that may be incorporated into the project design. The purpose of the ESMP is to predict possible effects and improve the environmental aspects of sub-projects by minimizing, mitigating or compensating for adverse effects. At present with the opaque nature of these projects it is unclear if the standards of the donor are being met. Not only this raise significant question marks over the environmental sustainability of the projects, but it also raises costs and affects the long term sustainability and marketability of solar.

There are also land-related concerns to these projects. Land supposed to be acquired for two solar projects include - 612 acres for Deh Halkani, District West and 727 acres for Deh Metha Ghar, District Malir – is mentioned in the RFP's. However, there has been no clear method for assessing the true costs of this land nor is there any mechanism for its allocation through open auction. This land is to be leased by GOS. It is imperative costing for this be detailed along with the land valuation and fluctuations of market value over time. In addition, the consequences of a 25-30 year lease at fixed tariff and its impact on long-term land effects have not been factored. At present we don't have clarity if World Bank guidelines have been followed and how this impacts costing. For District Malir the RFP talks about the leasing arrangement and says "Subject to execution of land lease agreement, the Successful Bidder (until such time till the SPV is formed) and following the incorporation of the SPV, the SPV shall make an annual payment amounting to USD 867/MW to SSEP which will be inclusive of annual land lease and ancillary charges incurred by the SSEP in respect of the Project." For District West the same is true except the payment amount is USD 1,105/MW. What is the breakdown of costs and the method behind these respective calculations? What is the metric of evaluation and rates being chosen? What sort of land is this and at what rate is it being valued? What is the compensation for land acquired as per this sum to be paid to SSEP? KE has not provided any details to ascertain whether and to what extent these costs are reasonable. The Sindh Energy Department can intervene to ensure a stronger land costing and protections of local interests.



The world over, local communities are being brought into the ownership and benefits sharing for RE projects. Additionally, the NE-Plan envisions microgrids and distributed generation solutions at the DISCO level. The Department can benefit greatly from developing a just energy transition policy to incorporate these concerns and enhance the RE transition framework ensuring a successful process. A consolidated just energy transition policy at the Sindh level will not only strengthen the regulatory framework attracting more funding and boosting investor confidence, it will also cement Sindh's role as an RE leader.

F. There are Question Marks around the Feasibility of Expanding Coal Mining Ambiguities in Coal Tariff Setting and Questionable Feasibility of Thar Rail Link Project

Given the rapid decrease in support for coal as a dirty source of energy, the decision to expand mining the Thar Rail Link Project this year the Contract Stage Tariff Petition for Coal discusses the transport of Coal through 'Thar Rail Link Project' for transport of coal and in the alternative use trucks for transport of coal. The Petition assumes a cost of USD 11.90 million for construction of railways and colony. Ostensibly this cost related to the connectivity of the CHS to the Railway Link project. However, no detail of the said connectivity is provided to justify the costs cited. The TCEB Thar Coal Pricing Framework (Standards and Guidelines) states that "detailed feasibility studies may be presented prior to seeking inclusion of transportation costs in the tariff." There are no such detailed feasibility studies provided in the said Tariff petition. As such, this cost head is both opaque and unreasonable and requires revision.

Moreover, there is no clarity as to how the costs of the rail link projects itself are being incorporated into the coal tariff. The rail link project is being undertaken by Pakistan Railway Freight Transportation Company. The sole premise of this project is to allow Thar coal access to markets beyond the mine-mouth power plants inside the Thar Coal Block areas, which was the original market design. As such, the cost of the expanded transportation network must figure into either the coal supply tariff for providing coal to power plants or other industries located in long-haul regions, or separately in the downstream generation tariff of power generating companies. If this cost is to be borne as subsidy by the GOP or GOS for providing relief to end consumers, such subsidy should only be applied after the tariff determination process so that end



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users and stakeholders are aware of the true cost of coal in the market. This is a clear requirement of best practices in tariff determination in the power sector. It is not clear as to how this cost is or is not being handled in the tariff determination process or being reflected in the Tariff.

G. Comprehensive Regulatory Framework for SEPR and Modeling for least cost generation and transmission planning is needed.

As discussed in our earlier meeting, a least cost methodology for Sindh's integrated and cross sectoral energy and climate planning is a need of the hour. We hope to pursue this as a topic of separate study and seek your guidance on how we can best support the Energy Department's efforts.

Regards,

Zeenia Shaukat (TKF),
On Behalf of Alliance for Climate Justice and Clean Energy (ACJCE)

Limited approach towards localisation

The way localisation has been explained in NEP is limited to acquiring equipment and fuel sources, even if they are as disputed as green hydrogen. Again consumers are treated as entities to whom electricity through these disputed sources have to be brought. The Plan prioritizes environmentally harmful and infrastructure-heavy coal and hydrogen as "local source" presenting it as means to generate consumer welfare by way of production of low cost energy. If consumer welfare was indeed the objective, the plan would have had a more detailed roadmap of DER where consumers would have been assigned the role of producers of electricity through [Renewable Energy Communities](#), or rooftop solar or DERs. The plan would have also



presented how local production and standardization of DER would be ensured so as to genuinely facilitate local, inexpensive electricity generation.

The way DER has been described:

As the plan produces no analysis of problem areas in the energy landscape, the solutions proposed also sound stand-alone and unrelated to issues faced by stakeholders as producers and users of energy. A good example of this is how DER (Distributed Energy Resources including distributed generation, storage etc.) has been approached in the plan. The chapter on DER not only misses the mark on the real causes behind poor uptake of DER, it also fails to see it as a source of energy democracy empowering consumers that have the opportunity to contribute to the energy basket as producers. A few major problems with the Plan's approach towards DER is presented below:

1. DER is a promising platform for non-conventional and renewables sources of energy. It also provides an opportunity to foster community collectives that could further empower consumers, helping their negotiating power and serving consumer interest informed by their own experiences. Furthermore, if the state facilitates organising of consumers into Renewable Energy Communities, (along the lines of cities in Europe) there is potential to reduce energy demand and promote flexibility; a role that RECs, established in Europe, have been undertaking.
2. The top-down approach towards DER leads the plan to outline the need to amend the existing distributed generation and net metering regulations due to “new global innovations, best practices & technological interventions”. It is to be noted that researches suggest the major reasons behind failure of DERs in Pakistan are related to poor market development and consumer finance infrastructure that discourages consumers to explore net metering.
3. The plan restricts DER as a function of DISCOS, instruments, and equipment. It keeps DISCOS (that have delivered poorly on DER promotion) as central actors who will set targets for distributed induction of renewable energy and inform generation planning.



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The plan also refers to import and quantum of equipment, data solicitation and technology as elements and solutions towards developing a strategy to capture the penetration of installed DERs in the system. There is very limited consumer oriented understanding of factors that really affect DER uptake. This includes issues such as absence of equipment standardization, fixing anomalies in access to finance schemes, to broader environments such as urban planning, land and space regulations and neighborhood collectives.

If DER has to be taken seriously, it needs to be done through citizens' collective, which the plan makes no mention of. In many countries, Renewable Energy Communities (RECs) in urban settings are recognised as stakeholders who craft cooperative arrangements for forecasting and planning the balance between production and consumption for better energy management and optimized flexibility.

4. The plan also needs to throw light on how DERs will be materialized and made successful in urban settings that are the largest consumers of electricity, and where density and unregulated planning not only obstruct DERs, it also results in higher demand which leads to more reliance on financially and environmentally unsustainable fossil fuel based power.

The plan makes no mention of non-conventional energy sources such as solar, small hydro, wind, bio-mass that could be exploited fully to create additional power generation capacity. There is likewise energy generation potential in municipal solid waste and industrial effluents, both of which are currently being improperly managed and disposed off. Reliance on large scale financially expensive and environmentally damaging fossil fuel based structures are not only economically damaging for consumer interest, it compromises social wellbeing by way of environment and land damage.

One of the fundamental problem with the NE-Plan's approach to DERs is that they are ambiguous, necessitating further elaboration. For instance, it remains unclear why DERs have not been strategically positioned to meet the electrification needs of rural communities, as envisioned by the microgrid regulations (National Electric Power Regulatory Authority Licensing (Microgrid) Regulations, 2022). DERs must compliment and promote the targets set



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by the microgrid regulations. However, these regulations themselves warrant revision and enhancement – for instance the minimum 5 KM distance from the host DISCOs' system prescribed by the regulations as a condition for the establishment of a microgrid has no reasonable nexus with any public policy objective. There is a need to rationalize the This distance effectiuvelty

Secondly, the National Electric Power Plan (NE plan) treats DERs primarily as the prerogative of DISCOs. While this approach may seem reasonable for stocktaking purposes, granting DISCOs the exclusive mandate to procure DERs through auctions or other means poses challenges. A more empowering and inclusive approach involves encouraging communities to collectively own and generate electricity through DERs. This not only aligns with the ideals of affordability but also fosters a democratic process, discouraging profiteering at the expense of vulnerable communities.

Thirdly, the NE plan appears to treat DERs and net metering almost interchangeably, inadvertently limiting the scope and potential of DERs by integrating them into DISCOs' systems. Following this logic, the NE plan anticipates amendments to the DER regulations by March 2024, despite these regulations not currently existing. Additionally, the issue of tariff determination for these DERs remains unclear.

Lastly, the NE plan should provide clarity on the impacts it will have on land use and outline measures to address arising issues. This comprehensive review and refinement are essential for ensuring that DERs play a pivotal role in enhancing energy accessibility while promoting community ownership and democratic principles.