Request for Information (RFI) for Development of Knowledge Resource Database - "South Asia Energy Knowledge Resource Database (SAEKRD)" for South Asian Countries

RFI No. IRADᴇ/SARI-EI/2019-20/01

18 October 2019

South Asia Regional Initiative for Energy Integration (SARI/EI)

Integrated Research and Action for Development (IRADe)

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1. Introduction

RFI No.:	IRADE/SARI-EI/2019-20/01
Issue Date:	**18th October 2019**
Closing date:	**4th November 2019**
Assignment:	Request for Information for Development of Knowledge Resource Database - "South Asia Energy Knowledge Resource Database (SAEKRD)" for South Asian Countries
Implementing Agency:	Integrated Research and Action for Development (IRADe)
Funding Agency:	United States Agency for International Development (USAID)
RFI to be submitted to:	pdasgupta@irade.org

The SARI/EI/IRADe is offering an engagement opportunity with interested organizations to provide comments, opinions, and recommendations in response to the proposed assignment i.e. Development of Knowledge Resource Database "South Asia Energy Knowledge Resource Database (SAEKRD)" for South Asian Countries "as described in the Description of Prospective Procurement (Section 4.). This is an activity funded under the United States Agency for International Development (USAID), South Asian Regional Initiative for Energy Integration Program which is being implemented by IRADe.

IRADe is inviting RFIs from prospective organizations to provide inputs, comments, opinions, and recommendations in response through this **Request for Information for Development of Knowledge Resource Database - "South Asia Energy Knowledge Resource Database (SAEKRD)" for South Asian Countries.** This Request for Information (RFI) provides an overview of the potential SARI/EI's approach and scope of work for the development of development of Knowledge Resource Database "South Asia Energy Knowledge Resource Database (SAEKRD)" for South Asian Countries. The following are the main purposes of this Request for Information (RFI):

1) To allow stakeholders and interested organizations to review, comment, and provide suggestions on the prospective activities scope of work and also on the overall assignment's approach; and

2) To increase SARI/EI's knowledge of capabilities among potential organizations and the overall knowledge for development of South Asia Energy Knowledge Resource Database.

The Database will act as information repository for the power/energy sector of South Asian Countries and provide regular updates through collective effort of the participating countries.

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Subsequent to the receipt of written response on the RFI, a multi-stakeholder consultative meeting will be held with interested stakeholders from the consulting firms, database companies, private sector, governmental agencies, think tanks, non-governmental organizations, academic institutions, and other sector experts with experience of engaging in power /energy sector to provide comments and expert opinions to refine the approach and scope of work for the development of SAEKRD. This meeting will be held on **8th November 2019 from 10:00 am to 1:00 pm**. Please indicate your interest in attending this consultative meeting via mail to pdasgupta@irade.org, by nominating **not more than two (2)** technical experts from your organization to participate. Please provide the names, titles, and contact information of these individuals no later than **6th November 2019**. The venue for the meeting will be shared later over email.

Please note that this is a Request for Information (RFI) only and is issued solely for information and planning /scoping purposes. This RFP in any manner what so ever, does not constitute a request for proposal/application/quotation, an invitation for bids or solicitation, and any proposals/applications submitted in response to this request will not be considered. The information provided in the RFI is subject to change and is not binding on IRADe. This RFI does not constitute an award commitment on the part of IRADe nor does it commit IRADe to pay for any costs incurred in the preparation of response to the RFI.

Responses to this RFI are strictly voluntary and it should be noted that responding to this RFI will not give any advantage to any organization in any subsequent procurements. If solicitations or funding opportunities related to the proposed activity i.e. SAEKRD is announced, they will be published on the www.sari-ei.org / www.irade.org at a later date.

2. RFI related questions / Clarifications

Questions if any related to this RFI should be directed to pdasgupta@iragde.org & rajivratnapanda@irade.org within **24th October 2019**.

3. Responses

Interested parties are requested to respond to this RFI and provide any documents that support their comments. Organizations should provide responses through email or through attachments to an email in either Microsoft Word compatible format or Adobe Acrobat format addressed to pdasgupta@iragde.org by **4th November 2019**

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4. Description of Prospective Procurement

4.1 Background

South Asia Regional Initiative for Energy (SARI/I) is a long-standing program of USAID started in the year 2000. The program covers eight countries of the region i.e. Afghanistan, Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan, and Sri Lanka. The program has consistently strived for enhancing energy security of South Asian nations. The SARI/I program of USAID entered its fourth phase in 2012, which was entitled South Asia Regional Energy Initiative for Energy Integration (SARI/EI), and will continue till 2022. The SARI/EI program aims to promote regional energy integration as well as increase cross border electricity trade in the region. The overall objective of SARI/EI is to create an "enabling" environment to support the establishment of a South Asian electricity market, and gain consensus and support from the key decision makers and stakeholders. SARI/EI program focuses on three developmental outcomes i.e. Coordination of Policy, Legal and Regulatory Framework; Advancement of Transmission Systems Interconnection; and establishment of South Asia Regional Electricity Market. To achieve these outcomes, three dedicated Task Forces (TFs) have been constituted under the program, represented by government nominated members from South Asian Country governments (Energy/Power Ministries), Electricity Regulatory Commissions, Planning Authorities, National Power Transmission utilities, Power Market Institutions etc. The program has an oversight body in the form of a high-level Project Steering Committee with representation from senior officers from each country. Integrated Research and Action for Development (IRADe) is the implementing partner for the fourth phase (2012-2022) of the SARI/EI program through a cooperative agreement with USAID.

Energy data is a critical enabler for policy makers and the research community in formulating and analyzing energy policies. Effective policy formulation in the energy sector relies on rigorous analysis of readily available, accurate, reliable and comprehensive data. Availability of such data requires institutional mechanisms and processes to collect, process and disseminate data in a timely manner.

SARI/EI is providing the Technical Knowledge support and assistance to the South Asia Forum For Infrastructure Regulation (SAFIR) Working Group on "Regulatory Cooperation to Facilitate Knowledge sharing, addressing Cross cutting Energy/Electricity Regulatory Issues and Capacity Building in South Asia". The objective of the SAFIR working group is to work towards enhancing regulatory cooperation to facilitate knowledge sharing, address Cross cutting Energy/Electricity Regulatory issues and build capacity in South Asia to facilitate transparent regulatory framework and promote investment in the South Asia Region. The above database i.e. South Asia Energy

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Knowledge Resource Database is being developed for South Asia for Infrastructure Regulation (SAFIR) Working Group.

The "South Asia Energy Knowledge Resource Database" shall consist of a web application on the official SARI/EI and SAFIR website that shall include the whole database in electronic format and will be available in public domain. The database shall have search filters and graphical data representation for making data interpretation for policy makers, regulators, energy utilities, and researchers as easy as possible. The Database will allow users to investigate and develop several interactive charts including various energy parameters such as fuel types, energy reserves, energy consumption and supply, sector wise consumption for the countries in the region.

4.2 Objective of the "South Asia Energy Knowledge Resource Database":
The main objective of South Asia Energy Knowledge Resource Database for South Asia is: -
- To create a single point, user-friendly platform with enabled data analytics for energy data and information related to the South Asia Energy/Power Sector for benefit of all stakeholders and public at large.
- To reduce information/data asymmetry, promote data transparency and help high quality data research and analysis.
- To disseminate data/information on the key indicators of power/energy sector for all the South Asian Countries in the form of MIS and other reports.
- Act as information repository for the power/energy sector of South Asian Countries and provide regular updates through collective effort of the participating countries.
- Publish Annual Energy Sector Data Book.

4.3 Nature of South Asia Energy Knowledge Resource Database SS
The nature of Database is to extract, compile data and information from various government organizational sources and Non-government entities/sources which is already published and in public domain. The right of data would continue to be with the respective governmental source organizations and SARI/EI will only extract and compile data and information for the purpose of analysis and research with the objective to promote cross border energy trade, facilitate knowledge sharing and address energy/electricity data asymmetry in South Asian Countries.

4.4 Scope of work

D1 - Data Collection and Data Compilation

D.1.1. Review, assess and collect the data and information (details are given in section D.1.4) from websites of different Government & Non-government entities in South Asian Countries (collection of data should be in form of data fetching (web scrapping), reading from the PDF, extracting from excel files and manually compiling as needed etc.)

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D.1.2. Perform a comparative analysis of data availability in each South Asian country with international best practices and highlight data gaps, if any and strategize how to address the data gap.

D.1.3. Develop database format of different data point (details are given in section D.1.4.) in structured and comprehensive manner (both Country wise and Regional) to be incorporated into the web based South Asia Energy Knowledge Resource Database. The database format must have clear explanation of each data type, its units, and various conversion factors that may be used for uniformity. Formats should be developed and finalized in consultation with SARI/EI. Compilation should be in proper format and templates such as in [npp.gov.in Database](https://npp.gov.in), https://asiapacificenergy.org, https://www.energy-charts.de/power_inst.htm

D.1.4. Key Data and Information for the South Asia Energy Knowledge Resource Database (Country wise and Regional):

4.1. Power Related Data (Both Instantaneous/Avg. value of 15 Minutes Block as applicable/Hourly/Daily/Monthly/Yearly as well as past Trend) of the following.

- Installed capacity and Fuel Mix
- Energy Met (MU)
- Actual Generation (MU & MW)
- Demand Met (MW)
- Energy and peak deficits, load shedding,
- Rate and volume transaction of power exchange
- Inter-Regional Power Exchange (MU & MW)
- Frequency Profile
- South Asia Diversity Factor (Diversity factor = Sum of maximum individual demand of each South Asian Countries ÷South Asia total system maximum demand)
- Transmission sector current and future trends
   ✓ Length and coverage of power transmission line.
   ✓ Voltage level and type of lines (HVDC, EHVAC etc.)
- Generation and transmission projects under implementation and planned.
- Regional Power Transfer and Trade.
- Transmission & Distribution losses/ AT&C losses (Country wise and state wise as applicable)
- Power Plants wise details Country wise
- Name of Power Plant
- Ownership Structure (Public, Private, PPP)

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- Location of Power plant
- Installed capacity
- Units Installed in power plant
- Fuel type

4.2. Key Energy[1] Statistics (Both Year wise and Trends Country Wise):

- Per capita energy consumption and Total Consumption.
- Energy resource potential and reserves.
- Energy Supply and Demand growth.
- Primary energy supply, final energy consumption.
- Total energy consumption and sector wise consumption
- Energy Balance of each Country and of the Region.
- Energy access.

4.3. Energy Trade including Cross Border Energy Trade:

- Cross Border Energy Trade inside the South Asia Region.
- Electricity
- Oil
- Coal
- Natural gas
- Energy import and exports outside of the South Asia Region.
- Power Trading and power market related data.
- Prices of Energy Commodities.
- Electricity
- Oil (Petrol and Diesel)
- Coal
- Natural gas

4.3.   Key Policy and Regulations:

- Key Energy and Power Sector Related Laws, Policy and Regulations.
- National Power and Energy Sector Master Plans/Projection etc.

D.2 - Database Design Document and Data Analytics.

1. Prepare and finalize a detailed 'South Asia Energy Knowledge Resource Database Design Document, taking in to consideration the various database format, with the approval of all relevant stakeholders on the same. In addition to various other aspects, Database Design Document should cover:

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[1] Energy to cover all forms of energy such as Oil, Natural Gas, Coal, power, Renewable Energy

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2. Main web page layout design

3. Dialog/features, indicating to users what data display options e.g. country, region wise will be available to them including data display formats, data analytics features, download formats (such as allowed to export or download the data table/chart/pivot table in CSV or PDF format). Developer should also suggest the visualization technique which may be more relevant. It is conceived that Database will have data analytic, indicative graphs, pie charts and Figures, Info graphics etc. indicators as per user's requirement.

4. Data should be in sequential manner, from one point to another in proper format. Data which requires human intervention, should have proper explanation and inputs for their data inputs.

5. Database should create the format for preparing and publishing the weekly/Monthly/Quarterly and Annual Energy Sector Data Book. The book should be available in word, PDF, excel form (data portion). Database also to have an intelligent user friendly search option for extracting and mining all the data and information.

D.3. Database Submission including IT intervention with all features

1. Based on the above South Asia Energy Knowledge Resource Database Design will be developed along with all the required IT features in consultation with SARI/EI.

2. As in future database will be expanded with more data points, therefore IT Architecture/features and the platform must keep the future expansion of Database in mind. The Organisation should suggest some standard IT package based on industry best practices about the expansion of the Database i.e. to have more data points keeping in mind for potential IT upgradation that may be required in future.

3. It is expected that data or information will be eventually fed by nodal point/ contact person of each South Asian Countries. In the above context, the Database must have log in and data feeding ports for each South Asian Country.

4. Conduct discussions with IT teams of concerned departments/ministries of Member Countries on the log in and data feeding ports and its compatibility and also to assess feasibility of integration of the Database with their respective database/Databases/ dashboards/ websites if any. For example, in case of India it is the National Power Database.

5. Website data Database should be hosted in .org Database or another Database with consultation with SARI/EI.

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6. Website Data should be hosted in cloud. The Organisation should suggest the cloud storage provider in consultation with SARI/EI. The Organisation should provide cloud charges separately.

7. Website should be generated in most advanced coding tool. Developer should select in consultation with SARI/EI.

8. Website platform should be compatible with all windows/mac operating system.

9. The Organisation should create same Database which work in play store i.e. in Application of mobile and with compatibility of windows/ mac operating software.

10. Graphic user interface of website should be user friendly.

11. Log in credentials and its associated features should be provided by developer which will help SARI/EI officials, respective government or Non-governmental entities assigned by SARI/EI in accessing the data. Feedback form should be available in every data sets.

12. Software and hardware rectification/deployment required for fetching of data from various sources if needed in some countries is to be specifically brought out by the organisation in its proposal along with its associated cost if any.

13. Testing of Draft Online Database: -Perform testing of beta version of Database in order to check all interactive and information functionalities and all the features.

14. Demonstrate key functionalities/features to the concerned stakeholders and get their signoff for initiating security audit. Support in addressing vulnerabilities identified during security audit.

15. Based on the suggestions of the SARI/EI and all stakeholder such as SAFIR working group members, energy power ministries, energy utilities (generation, transmission and distribution) submit the final Database with all the features for making it live.

16. Develop a detailed Database manual for maintenance and operation of the Database.

D.4. Capacity Building and Data Demonstration

1. The Organisation should provide maintenance and support services for 3 years after Go-Live of the data Database. and quote support services charges separately, inclusive of all prevailing taxes for the above.

2. Training of SARI/EI officials and other Country officials of key organization (who are the source of data), so that user can add/edit/manage data in the Data Database. Total number of man days for training is 20 for all South Asian countries including SARI/EI officials.

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3.   Develop multimedia tutorials/ videos, user manuals, and other training collaterals for training of concerned stakeholders

D.5. Time Period

1.   Time period of the work is 6 months.

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