

## Report

### Bijali Vikalp Sangam: Towards Energy Democracy Bodh Gaya, Bihar (3<sup>rd</sup> to 6<sup>th</sup> March, 2016)



Vikalp Sangam<sup>1</sup> is a process to create a space for individuals and organizations to come together, dream and deliberate towards an alternative future. While resistance efforts are underway, and need to be supported, we also need to create a cross sectoral platform on alternatives (or constructive work) where groups/people can come together: a space to share, learn, build hope, and collaboration.

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<sup>1</sup> Vikalp Sangams are an ongoing process of bringing together practitioners, thinkers, researchers, and others working on alternatives to currently dominant forms of economic development and political governance; for details see

<http://kalpavriksh.org/index.php/alternatives/alternatives-knowledge-center/353-vikalpsangam-coverage>

*Between March 3<sup>rd</sup> and 6<sup>th</sup> 2016, a large group of energy practitioners, experts, activists, academics, think tanks, entrepreneurs, came together as part of Bijali Vikalp Sangam in Bodh Gaya. The sangam was organised and hosted by Kalpavriksh, CEED, Greenpeace India, SELCO and Oxfam India, and was the first thematic sangam of its kind. It explored the ways to reach sustainable and equitable use of energy with the specific focus on electricity. The aim was to create a platform to enable dialogue around an equitable energy future.*

## **DAY 1**

The first day began with a round of introductions by the participants. Participants discussed expectations from the process. Energy is a vast topic, and so the focus of the sangam was electricity and issues of access, production and distribution of electricity. The focus on electricity has been long overdue, necessitating pathways to reach energy (electricity) alternatives. The attempt was also to look at the social, economic, and political power play in energy sector.

### **Challenges and Opportunities: Electricity Access Through Sustainable Solutions**

Post the discussion around the agenda and the schedule of the sangam, in the next session, all the participants were broken into groups, where practitioners talked about their experiences, especially the challenges that they have faced, and how they have been trying to overcome them.

Representatives from SELCO Foundation, Badlav Foundation, WWF, LEDEG, BASIX, Barefoot College, Ekta Parishad, Switch On and Tara Urja foundation and other participants deliberated and listed major challenges during an intra- group discussion.

#### Technology:

- Basic understanding and skill capacity of the technology deployed.
- Lack of buy-in/technological capacity building for community is alienating.

#### Policy and Planning:

- Un-affordability of electricity, less subsidies for micro-grid
- There is no regulation for the solar off grid, which leads to proliferation cheap products in the market.
- Need of a policy draft for off-grid sector and a renewable energy bill.
- Technological developments have been good but the predominance of grid is problematic. So balance between grid and off-grid should be complementary.

#### Access to Finance:

- Integration of home system into grid.
- There is an investment barrier as there is hidden cost. Water-energy nexus should be explored.
- Management on the demand side is common but limited focus on the supply.

- Use of demand limiters and prepaid billing opportunity. For example Tara Urja (Ngo working on energy access) have created energy service companies and provide incentives to grassroots. However, there is policy challenge and practitioners are not sure which agency to approach.

### **Dharnai- The solar village**

Post lunch Ramapati, from CEED, shared a presentation on Dharnai – the solar village. The origins of the experiment lay in the Greenpeace report '*Hiding Behind the Poor, Part II*' – which highlighted the energy inequity in the country. The 2010 Bihar state election was a good time to highlight the report findings, since Bihar had 19,000 villages that were not electrified at the time. Greenpeace ran a successful election manifesto campaign to get RE on the political agenda of all the political parties. The new Bihar government released an RE policy in 2011. Greenpeace continued to work with the government and provided a roadmap, which required 76,000 crore investment. They could get Asian Development Bank and World Bank on board in this roadmap process. Chief Minister of Bihar, Nitish Kumar, offered that while the report looked great on paper, if Greenpeace could electrify one village and present it as working model, Bihar government would take it as an example for the rest of the state. The estimated cost was 4.5 crore per village. The project had to be a 24X7, community run community owned, community run, pilot project.



Dharnai, was chosen due to some of its interesting characteristics. It is not far from Patna and Gaya; had had electricity 30 years back, but then became de-electrified though its neighbouring villages had electricity. It was a reasonably 'developed' village, off a highway and had a railway station near the village. The model assumed that as demand would rise, the project should generate money for expansion, under the management of a village committee. Dharnai has 420 households spread across three hamlets; good social infrastructure – three to four schools, model anganwadi etc. A 100 KW (70kW for lighting in 5 clusters, and 30 kW for agriculture pumps) solar micro-grid was planned.

The project was launched in July 2014, and the process of competitive bidding was employed. Evolved packages based on equity considerations (lower tariffs for the poor), with cross subsidisation based on agriculture. The realisation of unreliability of grid electricity, made villagers hopeful about solar. The village had 10 TVs and 100 fans. However, post the solar installation it shot up to 30 TVs and 300 fans in one month.



The objective of the Dharnai experiment was to challenge the centralised model of electricity generation. In addition, seven lakh INR per year was to be generated from agriculture pumps (electricity offered at half the rate of diesel pumps). However, the VEC did not agree. According to Ramapati, community ownership and decisions making has to be accompanied with capacity building, otherwise it might backfire. Consequently, they looked for agricultural pump users in other villages – as that revenue was critical for the project to function. They have only been able to install eight agriculture pumps so far (project planned for, and needs 10).

### **Role of institutions: Energy policy and related alternatives**

Ashok Srinivas of Prayas, chaired the afternoon session and gave an overview of the electricity sector in India. India has a capacity of 270 GW: 65% coal based and 20% large dams, 15% modern renewable. 95% of electricity delivered in India is unreliable. Power generation has been the major contributor of the current public bank debts. The important players in the electricity sector are distribution utilities and electricity generators (separation more recent, earlier combined in public sector), now both public and private. Under Indian constitution, it is concurrent list subject so decision-making takes place at both state and central level.

Indian renewable energy sector is largely privately owned and investment intensive and the challenges that the sector faces are:

1. Access: Do not have adequate access or access is of extremely poor quality.
2. Land and water or other environmental challenges.

3. The role of the state in enabling access, and the state's accountability.
4. Transmission and distribution.
5. Availability of DC appliances is a huge challenge.

Solutions that Prayas offered to above challenges:

1. To provide cheapest source through infrastructure that is available or built. If grid-based power is cheapest, need to ensure grid infrastructure works for poor
2. Improve energy efficiency
3. Large-scale renewable energy needs to be introduced in equitable and calibrated manner and the decision making process should involve all classes.
4. Continue influencing key actors/institutions. There is need of decentralisation and democratisation in decisions making process on both supply & demand side, however state is needed for regulation.
5. Need of civil society oversight. Make the whole system more transparent and accountable.
6. Nimble policy regimes that can bring about institutional changes.

The need to bring in transformation in lifestyles and value systems was brought up on multiple occasions. Even if the crucial issues like access, distribution are worked upon, the problem of inadequacy will persist, because of the high consumptive lifestyles. Studies point out that there is a positive relationship between efficiency and consumption, i.e. as the efficiency increases the consumption also goes up. The logic is not to discourage the efficiency but the idea is to change the way people consume.

In continuation to the above session Aditya Ramji spoke about the problems of the off grid sector and how while there is an urgent need to look at DRE solutions (especially to facilitate energy access and as an alternative to kerosene use) current government policies are not enough to address the issues. Government is focused on large-scale projects and so decentralized solutions are completely absent from policy and planning. RE products lack standardisation and regulation. In fact, there is a very limited data on RE installations in the country and hence, huge allocations are made without any reliable and proper information base. There is a lack of clarity in delegation, authority, and accountability between different government departments and stakeholders.

The sector is in urgent need of innovation. Both the centre and the state need to coordinate their work and should build a common platform for information sharing and discussion. The pressing question that various participants raised was who will propose this transition? As by nature, this energy is variable and people have huge stakes in current systems. How will the transformatory process unfold? In addition, distribution cost has to be factored in, so that it can be made explicit - who actually bears the cost of distribution.



The idea of consumption-based cess deliberated on by the group at length, as an option that might curb high consumption patterns of people, albeit with disagreements. There is a need for a public campaign to bring about such cultural changes in consumption and choices.

However, the most pertinent argument of the *sangam* was making electricity access as fundamental and need to have a consumer base. This will challenge the ever-rising consumption patterns and consumerist lifestyles. This also pushes to think more on the investment side. If energy has to reach poor, its investment has to be given immense thought.

#### **Alternative energy pathways:**

The above session was followed by last session of the day on ‘Integrated Energy Pathways’ by Shankar Sharma, Power Policy Analyst.

Mr.Sharma raised key question about ecosystem services and how we can meet legitimate energy demand.

India’s energy requirement is not legitimate. Ninety five percent of energy requirement has to be imported and we have worst power transmission and distribution in the world.

This suggests that we can be at the surplus and our first priority should be to make existing system on par with international transmission systems. The three conventional technologies, thermal, hydel, and nuclear are not sustainable and have miserably failed and so this pushes us to think about the alternatives. Renewable is an efficient alternative but the question is how much of renewable energy? The priority should be to reduce our demand and change our behaviour patterns. There is also huge potential in motional energy that is not yet explored and we need appropriate infrastructure to develop other forms of renewable energy rather than just relying on solar. We need to take into account social and environmental implications and cost- benefit analysis as well as optional analysis for all energy. Public hearing and consultation on all issues and with immediate effect should draft a policy document as large that it can be used as a model for the country. The overall message was a need of complete paradigm shift from current GDP centred model of development.

For the above, we need to have deep and radical structural changes, as household energy is a small fraction; cement and iron industries are energy guzzlers. Envisioning for energy has to come from various sectors. People's movement have had access to resistance but not alternatives and so the process of Vikalp Sangam is to bring both these players together with the aim to search for alternative scenarios in each sector.

Axel Harneit-Sievers from Heinrich Böll Foundation, India Office gave a presentation on the energy scenario in Germany and its transition from nuclear to renewable. Here is the link to the presentation.<sup>2</sup>

## DAY 2

### Field visit to Dharnai:

First half of Day 2 was spent at a field visit to Dharnai, which served as a case study for participants, of rural, off grid RE in practice. The participants of the Sangam viewed the micro-grid, toured the hamlets, and had extensive discussions and Q&A with the villagers and Village electrification Committee (VEC). VEC is supposed to check inappropriate use and handle complaints. They shared that more households are now asking for connections, but they do not have surplus capacity as of now. Expansion scope is limited, as there is a huge cost in increasing panels plus batteries. Government policy of providing free/cheap electricity has affected the micro-grid project. Initially, there were no meter in houses and people consumed carelessly. Thus, supply was poor. Now they have installed meters – and are now charging per unit, as opposed to fixed packages. Users need to be continuously made aware of usage at the initial stage. The Rates currently range between 9.50 to 11 Rs / unit for households.

About 50 houses in Dharnai already had standalone rooftop systems. Therefore, people who can afford it, invest in their own systems. Installed streetlights have eased the night movement and activity in the village post this project. Women feel safer at night; can work till late; villagers do not have to rent outside lights for weddings and shops can afford to be open late in night. They can now do a lot of their post harvest agricultural work (in front of their houses) in the nights. One new occupation that has stemmed in the village post this project is that they can fill the village pond with water from agricultural pumps, that is used to raise fish, and the rental of the pond goes to the village funds (Rs 50K per year).

When compared to grid electricity supply, people felt the voltage was better (and fixed) in the solar provision. They do not fear getting a shock as all the wiring is covered. In addition, this is in their control as opposed to grid electricity, which came and went unpredictably.

Greenpeace (GP), BASIX, and CEED collectively run and maintain the project and tariff setting is via VEC. (GP placed a figure for battery replacement expense, and then let the VEC decide tariff; it rethinks, revisits this number based on actual revenues generated).

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<sup>2</sup> <https://dl.dropboxusercontent.com/u/14379907/Energiewende%20-%20Presentation%20by%20Rebecca%2C%20HBF%20DC%20office%20-%20edit%20for%20VS%20Bodhgaya%20by%20Axel%2C%20March%202016.pptx>

First year revenue generation has been lower than expected, due to non-deployment of agricultural pumps. CEED hopes this will change over time and they will be able to generate the funds required for battery replacement. (They need to generate 25Lakhs in 5 years for battery replacement)

**Additional Session with Ramapati from CEED:** While CEED and Greenpeace certainly wanted to see a model that could be replicated across Bihar and more, but they themselves were perhaps not best equipped to lead the large scale installation. Also, the model had to be looked beyond just as a business perspective.

Impacts:

- Post Dharnai, Bihar govt has announced 150 such mini-grids (with World Bank), and implementation is awaited.
- Government is working on solarising government buildings in Patna.
- GP & CEED are drafting Bihar's RE Policy.
- There is a huge influx of solar shops and products in Patna and infact Patna is supplying solar equipment to other parts of country as well.

Rama felt that stressing community control from the Day 1 was perhaps a mistake. It can backfire because communities are often not ready. In addition, presence of the implementing organisation post the installation is very crucial, as in this case, GP had limited presence when project went off-ground and this can result in varied ground challenges. Dharnai is one of the best run mini-grids for such scale projects. No other mini grid in the country is charging as low as 9-13 Rs / unit. Also, low operating expenses in the first year eased the process of implementation.

### **DAY 3**

#### **Discussion- Declaration and Action points:**

The last day of the Sangam was scheduled for parallel discussions on the Bijali Vikalp Sangam declaration along with deliberating on action points and Alternative Framework note. Participants were asked to choose the group discussion they want to be part of and accordingly the entire group was divided. Participants stressed on the need to integrate various aspects and consolidate entire discussions to come out with powerful declaration, which will be submitted to the centre and state governments.

A group of policy experts and practitioners worked on the declaration of the Bijali Vikalp Sangam (Annexure 1), which was later also submitted to the Bihar state government and the Prime Minister's office. The groups of experts deliberated on the action points (attached as Annexure 2) that are to be pegged by individuals and organisation post the Sangam. All the participants stressed on the need of organic continuity of such a group as it can act as a catalyst to the alternative model of energy. An email group was suggested that could facilitate continued discussions, knowledge sharing, and collaborations among participants.

## **Annexure 1:**

### **Towards Energy Democracy: A Vision Statement** **Adopted at Bijli Vikalp Sangam at Bodh Gaya, Bihar, March 2016**

A large group of civil society organizations including experts, energy practitioners, think tanks, peoples' movements, academics, and entrepreneurs - came together as part of Bijli Vikalp Sangam in Bodh Gaya, between 4th to 6th March 2016. We reflected upon and explored sustainable equitable practices on energy, with a focus on electricity. This was aimed at building a continuing critical dialogue with the state and other stakeholders in order to build a just and equitable energy future.

There are several serious social, environmental, technical, and economic issues with implications for future generations, if the business-as-usual approach continues.

We acknowledge that future energy scenarios must factor in realities such as limited natural resources, accelerated environmental degradation, growing populations, climate change, and high energy poverty.

Roughly two thirds of India's population do not enjoy energy security. About a quarter of India's population has no access to any source of electricity despite a massive increase, of more than 200 times, in power generation capacity since Independence. Many of those with access suffer from erratic supply. The fact that Delhi's per capita electricity consumption is more than 10 times that of Bihar is representative of the inequity in consumption in the country.

Our continuing reliance on large centralized power generation, through conventional sources, will continue to exacerbate climate change impacts, displacement, biodiversity loss, water stress, destruction of forests, and pollution of air, land, water and sea. This commodification of our commons will further compromise our energy security and undermine the universal right to energy, including electricity.

There is increasing evidence that nuclear power is neither clean, affordable, nor safe; coal power is not only dirty, but also adds greatly to our carbon footprint; and large hydro is massively destructive. Therefore none of these can be long term solutions for our country.

The government, in its recent policies, has announced fairly ambitious targets for renewable energy, although much of it is centralized and corporate controlled. However, there are worrying indications of significantly expanding coal, nuclear and large hydro. While the grid is a reality of present day electricity access, a far more democratic and decentralized governance of the grid becomes an imperative.

Unlimited growth and consumerist culture is incompatible with a finite world. We call for an urgent paradigm shift, from the currently dominant model of consumption-led development, to creating frameworks of human and ecological well being. This transition should be defined

by the principles of sustainability, equity, and justice. This requires special attention to the needs of the most marginalized, including women, Dalits, Adivasis, small & marginalised farmers and particularly vulnerable tribal groups.

Therefore, with respect to the electricity sector, we call for action on policies and practices to:

- Mainstream and prioritize renewable energy to meet all future electricity needs. This should include decentralized solutions including micro grids, stand alone systems etc. According to a UN report, this will also help in creating more green jobs than the conventional sector. Direct investments towards the above objectives
- Focus on ensuring sustainable, universal access to electricity, which is affordable. This will require a redistribution of available electricity, equitably, to facilitate a good quality of life
- Build consensus for a new energy paradigm driven by social and individual responsibility, to limit our energy consumption and make lifestyle changes, that are consistent with shrinking planetary resources
- Ensure that the new imperatives are integrated into all appropriate educational and skill development activities
- Improve efficiency of existing electricity infrastructure to match global best standards
- Prioritize demand side management and energy conservation, particularly of large energy guzzling sectors
- Develop a time bound transition plan to phase out coal and nuclear, while ensuring displaced workers are appropriately re-skilled and re-employed. No construction of large new hydro plants. True cost of renewables and energy efficiency is much lower when compared to the total cost including social, environmental costs of nuclear, coal and large hydro
- Make cumulative, sectoral, social and environmental Impact Assessment compulsory for all power projects including renewables.
- Technological and innovative transitions will be necessary across all sectors. These must take place through fair and equitable processes that avoid lock in. Though technology will play a role, solutions for society should not be techno-centric.
- Implement comprehensive cost benefit and options analysis, including externalities for any power related decision making
- Mandate free, prior, and informed consent of all concerned communities before initiating any power project

The search for solutions should be guided by principles of direct, radical, and ecological democracy in which citizens, including the marginalized, are involved in decision making. This also requires providing mechanism and spaces for such direct citizens' involvement.

We resolve to take this message to a nationwide audience. This group looks forward to constructive engagement with the decision making process of public policy.

*(Issued on behalf of participants by the Sangam organisers Kalpavriksh, CEED, Greenpeace India, SELCO, and Oxfam India) 6 March 2016*

(Contacts: Ramapati Kumar, CEED, 09845535414; Vinuta Gopal, Greenpeace India, 09845535418)

LALITA RAMDAS READING OUT THE VISION STATEMENT, VIDEO:  
<https://www.youtube.com/watch?v=rILhQjVWL0&feature=youtu.be>

**The Vision Statement was signed by the following participants and submitted to the Indian Prime Minister and the Bihar Chief Minister:**

<b>NAME</b>	<b>ORGANIZATION</b>
Abhishek Srivastav	Development Alternatives
Aditya Ramji	Council on Energy, Environment and Water (CEEW)
Adritha Subbiah	SELCO Foundation
Afsal Najeeb	Centre for Technology Alternatives for Rural Areas (CTARA), Indian Institute of Technology - Bombay (IITB)
Akshay Gupta	Greenpeace India
Amit Mehta	Basix
Anand B. Rao	Centre for Technology Alternatives for Rural Areas (CTARA), Indian Institute of Technology - Bombay (IITB)
Anand Charan Sethy	RCDC, Odisha
Ankita Jyoti	CEED
Arvind Kumar	Badlao Foundation, Jharkhand
Ashish Kothari	Kalpavriksh
Ashok Sreenivas	Prayas (Energy Group)
Ashwini Chitnis	Prayas (Energy Group)
AxelHarneit-Sievers	Heinrich Boll Foundation

Benny Kuruvilla	Independent
Birendra Kumar	NSVK – Jharkhand
Didier Prost	Individual French Architect
Dillip Kumar Nayak	RCDC – Odisha
Hardeep Singh	Society for Promotion of Wasteland Development, New Dlehi
John D'Souza	CED
Kaushik Mitra	Switch ON-Onergy
Kumar Sundaram	Coalition for Nuclear Disarmament and Peace(CNDP)
Lalita Ramdas	CNDP
Mahendra Yadav	NAPM
Manish Kumar Pandey	Lighting a Billion Lives (LaBL) Campaign-(TERI)
Mitavachan	Center for Sustainability, Policy & Technology Management
Mona Patrao	Redstone Eco Centre and Organic Farm
Praful Lakra	Chaupal, Chhattisgarh
Navin Kumar	DVV – Jharkhand
NC Narayanan	CTARA, IIT Bombay,
Pallav Das	Environment Consultant
Pallavi Gupta	Oxfam India, Delhi
Pooja Parvati	Oxfam India, Delhi
Prakash Gardia	Oxfam India, Chhattisgarh
Praveen Singh	Independent
Priya Pillai	Greenpeace India
Pujarini Sen	Greenpeace India
Raajen Singh	CED/MOFCA

Rajendra Ravi	NAPM/IDS Delhi
Rajita Kurup	Oxfam India, Delhi
Ramapati Kumar	CEED
Ranu Bhogal	Oxfam India, Delhi
Ravi Chellam	Greenpeace India
Ravindra Nath	Barefoot College, Tilonia
Rowena Mathew	Development Alternatives
Sadia	Heinrich Boll Foundation
Sajan	Doordarshan Kendra Thiruvananthapuram
Shankar Sharma	Power Policy Analyst
Shankha Lahiri	Development Alternatives
Shrishtee Bajpai	Kalpavriksh
Soumya Dutta	Bharat Jan Vigyan Jatha / India Climate Justice
Srihari Dukkupati	Prayas (Energy Group)
Subhro Sen	WWF India
Sujatha Padmanabhan	Kalpavriksh
Sundarrajan	Poovulagin Nanbargal
Sunil Dowarkasing	Greenpeace International
Tarak kate	Dhararmitra
Thinless Dorjay	LEDEG
Uday Kumar	Peoples Movement Against Nuclear Energy
Vanita Suneja	Oxfam India, Delhi
Vinuta Gopal	Greenpeace India
Vishwanath Azad	SHARC, Jharkhand

## Annexure 2:

**Energy Sangam, action points (6.3.2016)**

Enhance, continue support to peoples' movements against destructive energy projects	
Alternative model for villages using Dharnai, Mahan, Kedia	GP
Map conflicts, resistances, alternatives (using EJ Atlas, WRI land rights mapping)	KV to peg EJ Atlas
Successful RE projects map /directory	GP as peg (Ravindra/Barefoot to help with 13 states; Mitav-SUSPOT? On microgrids)
Material on making lifestyle shifts, make rich aware of impacts of excess use: articles, documentaries (in several languages)	
Spreading awareness in younger generation: childrens' material on energy? Sessions with kids	Tarak (Marathi) Mona (sessions) Existing material to be circulated
Use media spaces currently available, e.g. Doordarshan (Sajan)	Sajan
Greater documentation and outreach on initiatives; use VS website, add profiles from Energy Sangam	(Ravindranath to send
Blogs by participants on experience at Sangam	Munna as peg
DRE for urban poor? Informal colonies? Rooftop farming in these in Delhi (NAPM, Rajendra Ravi), can GP help with solar?	GP to take up SELCO
Power Idinithikarai village through DRE as political statement in midst of struggle against nuclear plant (Kudamkulam)	GP to help with tech assessment (anyone else, we can ask DA, Prayas)
Incorporation of DRE vision into state climate action plans, with people's participation, using example of Karnataka (Shankar)	IIT Bombay w. Shankar NC Narayanan – Kerala
Fleshing out vision statement with a sust/equitable electricity roadmap inclgovt's targets(building on Shankar/GP visions)	Shankar with GP (ask who) and Oxfam (by end of 2016)
Special focus on marginalized: single women led HH, adivasis in hilly areas, dalits; use Jharkhand women's	

network in panchayats	
Set up or consolidate for-profit entity and other consultancy services to take up what is otherwise given to McKinzeysetc, for DRE and other solutions	
Peoples' movements & platforms like NAPM to add messaging on alternatives	
State level scenarios like TN's by Shankar using similar title and template	Oxfam (Chhatt, Jharkhand, Odisha), Shankar,
Letter from participants to Nitish Kr on proposal for nuclear, high dam on Kosi (and possible meeting of Udaykumar, Lalitaetc with Nitish Kr)	Letter by ? CEED to facilitate meeting
Enhance solar etc to also meet radio, fan, tv needs to make it more attractive	
Follow up meeting after a year	Oxfam can fund CEED for Bihar/Jharkh
Email list for energy VS	John D'Souza
Middle class rooftop roadmap	GP and Oxfam
Alternative energy forum	GP