Promoting Solar Power as a Remunerative Crop

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Anand, the Gujarat town that gave India its dairy cooperative movement, has now spawned in Dhundi village the world's first solar cooperative that produces Solar Power as a Remunerative Crop. When compared to other models promoting solar irrigation in the country, the SPaRC model, which has successfully completed one year in Dhundi, offers multiple benefits across-the-board: it will control groundwater overexploitation, reduce the subsidy burden on DISCOMs, curtail carbon footprint of agriculture, and help double farmer incomes.

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In May 2017, the world's first Solar Pump Irrigators' Cooperative Enterprise (SPICE) completed its first year of operation in Dhundi village in central Gujarat. Solar pumps are not new in India, and their number has grown from less than 7,500 in 2010 to nearly 1,00,000 in 2015–16 (IANS 2017). Usually, these pumps continue to run whether the farmers need the power to irrigate or not, since surplus solar energy goes waste anyway. However, the members of Dhundi SPICE operate differently. Once the farmers are done with irrigation, they pool their surplus solar energy and sell it to Madhya Gujarat Vij Company Limited (MGVCL), the local power distribution company (or DISCOM) under a 25-year power purchase agreement. In return, these farmers have surrendered in writing their right to apply for a subsidised grid power connection for 25 years.

The first group of farmers to join the cooperative were offered a feed-in tariff (FiT) of ₹4.63/kilowatt-hour (kWh) for the solar power sold to the DISCOM. In mid-2016, this was the lowest tariff any utility-scale solar generator had won in open bidding. To incentivise the farmers to conserve groundwater, the International Water Management Institute (IWMI) and CCAFS (CGIAR programme on Climate Change, Agriculture and Food Security), which piloted the Dhundi cooperative, offered farmers a green energy bonus of ₹1.25/kWh and a water conservation bonus of another ₹1.25/kWh, taking the total FiT to ₹7.13/kWh for the power sold.

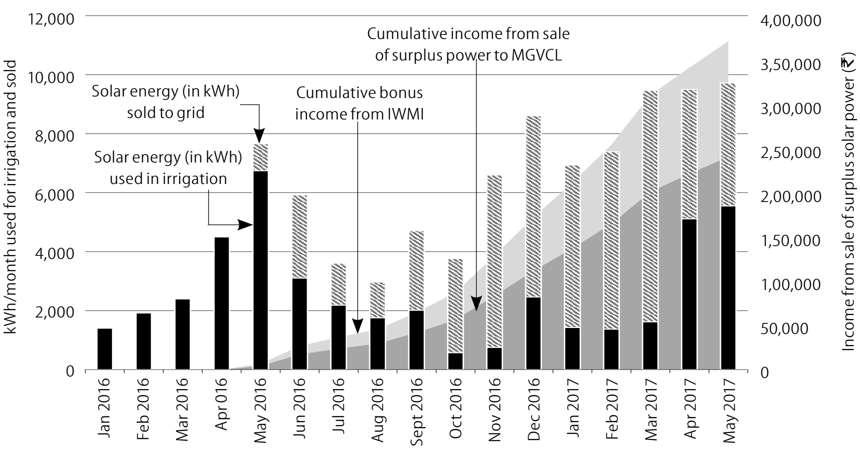
Figure 1 summarises the first 18 months' operating results of Dhundi SPICE[1] (DSUUSM 2017). The owners of six solar pumps with a total capacity of 56.4 potential kilowatt (kWp)[2] and seven acres of farmland generated 97,500 kWh of solar energy during this period. Of this, they used 45,350 kWh of energy for irrigation and injected the remaining 52,150 kWh (53%) into MGVCL and earned ₹3.71 lakh in net cash income from solar energy sales. As Table 1 shows, the net income of SPICE members increased by 46% from ₹6.95 lakh during 2015–16 to ₹10.16 lakh in 2016–17, and that income from solar energy sales was 65% of their total income in 2016–17. This suggests that the "solar crop" can help in doubling smallholder incomes.

Table 1: Trends in Household Income of 6 SPICE Members *

Net Income (₹) from:	2015–16	2016–17
Crops	5,28,670	4,97,792
Sale of solar pump irrigation	1,33,550	1,53,850
Sale of surplus solar energy	6,523	3,64,534
Net household income/year	6,68,743	10,16,176

* Diesel pump irrigation sales by SPICE members ended in rabi 2015.
Source: Computed by the authors using data from DSUUSM (2017) report.

Figure 1: Operating results of Dhundi Solar Cooperative (January 2016–May 2017)



Source: Computed by the authors using data from DSUUSM (2017) report.

Although solar pumps became operational in January 2016, the power purchase agreement came into force only in May. So before May 2016, they used all the energy generated for pumping groundwater. But from June 2016 onwards, their energy use for pumping declined and their energy sales began to increase. This was consistent with the IWMI's original premise: at a FiT of ₹7.13/kWh for solar energy sold, farmers would pump groundwater as if they were using the grid power supplied at ₹7.13/kWh.

Benefits to Farmers

Dhundi has plentiful groundwater, amply recharged by two surrounding minor canals of the Mahi irrigation system which wet parts of the village's farmland. Yet, groundwater irrigation has been expensive since all 49 owners of irrigation wells in Dhundi, except one, use 7.5 to 10 horsepower (hp) diesel engines to lift groundwater.[3] These diesel pumps deliver energy for pumping at an effective cost ranging from ₹18–₹25/kWh, whereas farmers in nearby grid-connected villages get subsidised electricity at ₹0.70/kWh. Dhundi SPICE members find solar pump irrigation preferable not only to the costlier diesel pump irrigation but also to the subsidised grid-electricity, which is supplied for seven to eight hours daily, with frequent interruptions and voltage fluctuations, often during the night (Shah and Verma 2008). Solar power, in contrast, is uninterrupted, predictable, available during daytime, and free of cost.

Initially, farmers were worried about the land footprint of solar panels; but they are now experimenting with a range of high-value crops such as spring onion, spinach, carrot, garlic, beet, and some medicinal plants that grow well under the elevated solar panels. Some are also growing paddy underneath the solar panels.

Farmers visiting Dhundi SPICE marvel at the idea of "growing" and selling solar energy as a cash crop that needs no seeds, fertiliser, pesticides, irrigation, and backbreaking labour and has the DISCOM as a ready buyer at their farm gate at an assured price. The income from the solar crop is not affected by droughts, floods, pests, and diseases. Moreover, with MGVCL's 25-year contract, they face neither price risk nor market risk. Which other crop can offer them such risk-free, zero-cost income flows?

However, the high capital investment in solar panels is a major deterrent. Initially, the Dhundi farmers were neither sure whether solar panels could drive their pumps nor that MGVCL would pay for their surplus power. Not surprisingly, the first six members grudgingly contributed only ₹5,000/kWp towards the capital investment, the balance subsidised by the IWMI/CCAFS research grant. Now that both these doubts have been put to rest, three new farmers joining the SPICE have contributed ₹25,000/kWp, nearly 40% of the total investment. This is not surprising. They view the solar pump not only as an irrigation asset but a *kamadhenu* (cow fulfilling your wishes), delivering a "climate-proof," risk-free income stream.

In Mujkuva, a village 30 km away from Dhundi, where tube well irrigation is done by using subsidised grid power, a dozen farmers have agreed to work with the National Development Dairy Board (NDDB)[4] and IWMI to organise a Dhundi-pattern SPICE by contributing ₹10,000/kWp for 10 hp pumps, ₹15,000/kWp for 15 hp pumps, and ₹20,000/kWp for 20 hp pumps.

Pro-poor Water Market

Dhundi SPICE has benefited not only solar farmers but also their neighbours. The arrival of solar pumps has transformed Dhundi's water market in profound ways. Before the SPICE was formed, 49 diesel pump owners sold irrigation service to some 200 small farmers at ₹500/bigha of wheat crop, which roughly covered ₹280 towards diesel/kerosene cost and ₹220 towards maintenance cost, water seller's labour, and profit. A 5 kWp solar pump owner now irrigates a bigha of wheat crop in five hours, using 25 kWh of solar energy and charges buyers only ₹250/bigha. At ₹250/bigha, solar farmers earn ₹10/kWh, 40% more than the FiT of ₹7.13/kWh for selling power to MGVCL. For water buyers, it is a bonanza as their irrigation cost has halved. It is no wonder that 15 diesel pumps in the SPICE neighbourhood have shut down fully or partially. A consequence of the lower irrigation cost is that a larger area is being irrigated, causing an increase in the aggregate groundwater draft. However, the adverse consequences would be much greater without a power buy-back guarantee, resulting in as much groundwater depletion as the use of free grid power has caused throughout Western India.

Gains to DISCOM

SPaRC will liberate DISCOMs from the deadweight of farm power subsidies which are responsible for their precarious finances. Had the Dhundi SPICE members taken grid power connections for 56.4 kW instead of solar pumps, they would have been entitled to 1,62,000 units[5] of grid electricity annually at ₹0.70/unit as against MGVCL's cost-to-serve of ₹4.50/unit.[6] Even if only two-thirds of this entitlement was used for irrigation, MGVCL would have had to bear a subsidy burden of over ₹4 lakh per year.[7] Additionally, MGVCL would have been required to invest ₹12 lakh[8] to connect these tubewells to the grid, at an amortised annual cost of ₹1.2 lakh.[9] Thus, Dhundi SPICE has saved MGVCL all these costs.

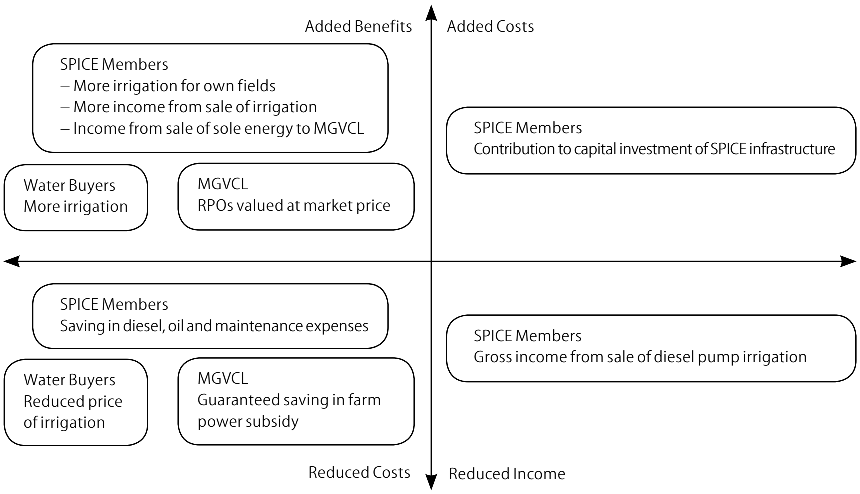
The current power purchase agreement assigns to the DISCOM carbon credit for all solar power generated by SPICE. Now that renewable purchase obligations (RPO) are being enhanced and enforced strictly, the market for renewable energy certificates (REC) is already reviving (Nayar 2016). As a "RPO-Obligated entity," MGVCL has earned the equivalent of ₹2.8 lakh[10] for 79,159 units per year of solar generation by Dhundi SPICE in its first year.

Overall, Dhundi SPICE will leave MGVCL better off by ₹8 lakh/year[11] for 25 years. Even if the DISCOM shared a third of these annual gains with the Dhundi cooperative members, the latter would get an additional FiT of ₹5.06/unit[12] over and above the DISCOM's average power purchase cost (APPC) of ₹3.5/kWh.[13] And even after paying such a remunerative FiT, the DISCOM will still be better off than supplying farmers grid power at ₹0.70/kWh.

Overall Benefits and Costs

The total capital investment in installing the solar pumps, microgrid, cabling, switches, transformers, and meters in Dhundi was ₹50.65 lakh, with SPICE

Figure 2: Partial Economic Budget of Transition from Diesel Pump Irrigation to Dhundi SPICE instead of Grid-powered Tube Wells



Source: Developed by the authors based on DSUUSM (2017) report.

members contributing ₹4.65 lakh and the CCAFS/IWMI contributing ₹46 lakh. Three parties, the SPICE members, water buyers, and MGVCL, stood to gain from this investment. Figure 2 presents a partial budget of the decision to switch from diesel pump irrigation to solar powered pumps instead of grid-power connections in Dhundi.[14]

The benefits to SPICE members—which determine their willingness to invest capital—include increased irrigation of their fields, valued at the opportunity cost of ₹100/hour levied by diesel pump owners; net income from selling irrigation service; saving in diesel cost; and net revenue from the sale of surplus solar energy to MGVCL. The water buyers benefit by an increase in the number of hours of irrigation, valued at the opportunity cost of ₹100/hour. The benefit to MGVCL is the implicit saving of farm power subsidy and the market value of RECs earned.

Table 2 presents estimates of the benefits to the three parties. The SPICE members gained ₹7.9 lakh/year by generating 79,159 kWh of solar power (roughly, weighted average revenue realisation [WARR] of ₹10/kWh generated), and these returns encouraged the new members to invest ₹25,000/kWp. Over 20 years of its economic life, the solar microgrid will deliver an economic internal rate of return (IRR) of 23%, when benefits to all three parties are taken together. But even when only the benefit to SPICE members is assessed, the investment will deliver a economic IRR of 15% over 20 years. With a capital subsidy of ₹45/kWp, a generation factor of 4.5 kWh/kWp/day and a WARR of ₹6/kWh (which a FiT of ₹5/kWh would easily generate), Dhundi-pattern SPICE would be bankable with the economic IRR exceeding 21% over a 20-year project cycle. The benefits to DISCOMs and water buyers would be extra.

Table 2: Financial and Economic Benefits of Dhundi SPICE: Results from First Year of Operation

	Before (Diesel Pumps)	After (Solar Pumps)	Gains to (₹) SPICE Members	Water Buyers	MGVCL
1 Hours of irrigation spent on personal fields	1,032.5	1,696.5			
2 Market value of irrigation hours spent on personal fields	1,03,250	1,69,650	66,400		
3 Hours of irrigation sold	1,856.5	2,840			
4 Market value of irrigation hours sold	1,85,650	2,84,000		99,350	
5 Net Income from sale of irrigation service	55,595[15]	1,42,000	86,405		
6 Income from sale of solar energy to MGVCL	0	3,64,500	3,64,500		
7 Diesel and oil costs (₹) (projected for solar pump hours)	1,73,340	2,72,190[16]	2,72,190		
8 Implicit saving of grid power subsidy for MGVCL: 28,000 kWh of grid power at 4.5/kWh					1,26,000
9 Implicit value of renewable energy certificates for 79,159 kWh at ₹3.5/kWh					2,77,056
Total			7,89,495	99,350	4,03,056

Source: Computed by the authors using data from DSUUSM (2017) report.

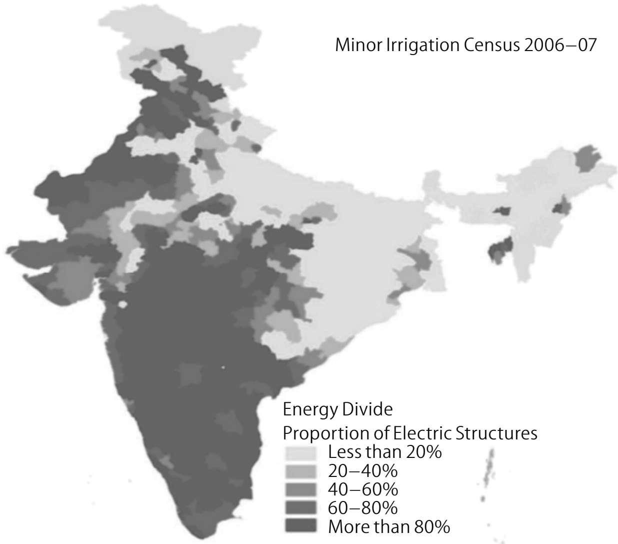
Demand-side Groundwater Management

India's major resource governance challenge is managing groundwater demand. Elsewhere in the world, "persistent groundwater depletion is always self-terminating" (Vaux 2011) because rapidly rising energy cost of pumping makes groundwater irrigation progressively unprofitable as water levels fall. In India, however, perverse power subsidies incentivise the waste of energy and groundwater depletion through deep tubewells. Figure 3 (p 17) shows that India's electric tube wells are concentrated in 10 states which account for 90% of the total number of tubewells in the country.[17] All these offer free or subsidised farm power supply. As Figure 4 (p 17) shows, four-fifths of India's groundwater over-exploited blocks are concentrated in these 10 states.

The state governments and NGOs have been trying hard to rein in groundwater depletion but to no avail, thanks to this perverse nexus. Worried about the adverse political fallout resulting from the removal of farm power subsidies, state governments usually avoid tackling the issue. Power subsidies have accelerated groundwater depletion and raised the energy cost of irrigation, which in turn has made power subsidy impossible to abolish without invoking the farmers' wrath on a massive scale. Between 2000 and 2013, India's farm power subsidy bill increased from ₹27,083 crore to ₹66,989 crore (GoI 2001, 2014). There appears no likelihood that these perverse power subsidies will end soon.

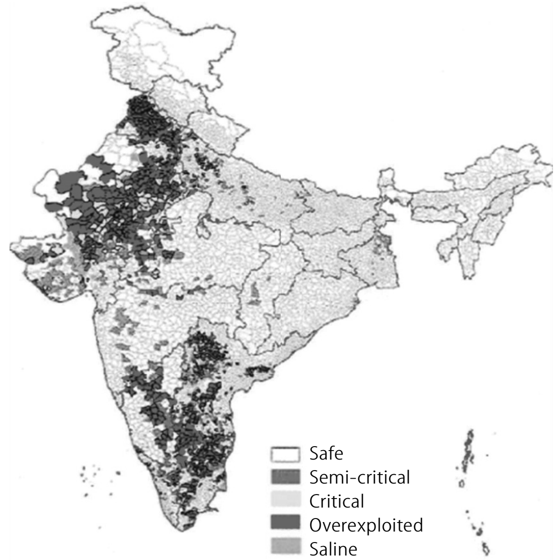
India's over 15 million electric tube wells consumed 1,68,611 million units of electricity worth ₹1,19,294 crore in 2014–15; against this, DISCOMs recovered ₹32,600 crore from farmers. This left a revenue gap of ₹86,694 crore (₹5.14/kWh), which was met by a mix of state government subsidy and cross-subsidy by non-farm consumers of DISCOMs (PFC 2016). SPaRC offers a painless and politically acceptable

Figure 3: Energy Divide in India's Groundwater Economy



Source: Shah et al (2016: 14).

Figure 4: Geography of Groundwater Depletion in India



Source: Planning Commission (2007: 9).

way to end these subsidies. As a bonus, solarising tube wells can deliver the entire target of 100 gigawatts (GW) of solar capacity, which the central government wants to achieve by 2022. Given India's massive agricultural load, Dhundi-pattern SPICEs, which get integrated at the tail end of the grid, can contribute enormously in smart grid management.

Presented properly, farmers would readily take to SPaRC under the Dhundi-type cooperatives. With a capital subsidy of ₹45/kWp in solar micro-grids and a guaranteed FiT of ₹5 per kWh, farmers would readily embrace the SPaRC option in which: (i) they continue to have the option to use subsidised grid power; (ii) they also have more and better quality solar power; (iii) once net-metered, they can also sell surplus solar power (net of grid power drawn); and (iv) they can earn even more by conserving water and energy by adopting water-saving crops and efficient irrigation technologies. As a bonus, solarising our electric tube wells will reduce India's annual greenhouse gas emissions by 4% to 5% (Shah 2009), helping the country meet its committed Intended Nationally Determined Contributions (INDCs) as part of the Paris Agreement.

Other Models

India's policy framework for promoting solar pumps should aim to: (i) incentivise farmers to conserve energy and groundwater to control over-exploitation; (ii) reduce farm power subsidy burden on DISCOMs; (iii) contribute to India's INDCs under the Paris Agreement; (iv) maximise farmer contribution to the capital cost of solarising the groundwater irrigation economy; (v) contribute to doubling farmer incomes; and (vi) offer rapid scalability.

Several models of solar irrigation are being tried by NGOs and state governments. But there are five which have policy traction and need to be evaluated against the above stated objectives. This has been attempted in Figure 5 in which the number of dots suggests our assessment of to what extent a given model furthers a policy objective.

DISCOM-centred model: The current policy promotes solar pumps with attractive capital cost subsidy to farmers wait-listed for grid power connections by DISCOMs. Its supposed benefit is saving subsidy burden on DISCOMs. In reality, it contributes to none of these six objectives, primarily, because it adds to existing diesel or electric pumps rather than replacing them. Studies show that most solar pump owners use them as secondary or standby pumps to complement diesel/electric pumps. This policy will most likely accentuate groundwater depletion in Western India and have little or no impact on farm power subsidies.

Farmer-centred SPaRC model*:* As Figure 5 suggests, SPaRC promotes all of the above six objectives which none of the other existing models can claim to do. However, the Dhundi model, as implemented now, is hard to scale up

Figure 5: Comparing Alternative Models for Promoting Solar Pumps in India

	1 DISCOM-centred Model	2 Farmer-centred SPaRC Model	3 Developer-centred Farmer-dedicated Solar Plant	4 Developer-centred Distributed Model I	5 Developer-centred Distributed Model II
Example	Present Policies in All States	Dhundi & Mujkuva, Gujarat	PRAYAS Model Maharashtra	Suryaraitha, Karnataka	Gujarat's Draft Policy
Objective 1: Will it incentivise farmers to conserve energy and groundwater?	●	●●●●●	●	●	●●●
Objective 2: Will it reduce farm power subsidy burden?	●●	●●●●●	●●●	●●●	●●●
Objective 3: Will it contribute to India's INDCs under the Paris Agreement?	●●	●●●●●	●●●●●	●●●●●	●●●●●
Objective 4: Will it incentivise farmers to share capital investment in solarisation?		●●●●●	●	●	●
Objective 5: Will it help in doubling farmer incomes?	●	●●●●●	●	●	●●●
Objective 6: Does it offer rapid scalability?	●●	●●●●	●●	●	●●●

Source: Authors' assessment.

because 90% of the capital cost was subsidised by the IWMI/CCAFS. Moreover, DISCOMs will resist a FiT of ₹7.13/kWh now that solar energy prices have dropped precipitously. However, the model can be rapidly upscaled with a capital cost subsidy of around ₹45/kWp and FiT of ₹5/kWh generating a WARR/kWh of ₹6 or more, offering IRR of 21% over 20 years.

Developer-centred farmer-dedicated solar plant*:* A model promoted by the NGO PRAYAS (Gambhir and Dixit 2015) being piloted in Maharashtra involves deploying tail end solar power plants (one to two megawatts in size) on panchayat land dedicated to agriculture where feeders are separated. These grid-tied plants would supply free daytime power to farmers. The surplus power would flow back into the grid, and the deficit would be met by the grid. Such plants would arguably be cheaper than individual solar pumps and can integrate energy efficiency into agriculture power usage. They can be set up as standard power purchase agreement (PPA) based projects that need no subsidy (over standard Jawaharlal Nehru National Solar Mission [JNNSM] incentives) and that help meet the DISCOM's RPO. It is argued that developers would invest in such projects to save the cost and hassle of land acquisition. The downside is that it provides no incentive for energy and water conservation nor does it offer an income flow to farmers since the developer has the residual claims.

Developer-centred distributed model I*:* In yet another model piloted in Karnataka in 2016, SunEdison, an American solar company, initiated a project where 220 farmers surrendered their grid power connections in lieu of solar pumps with 1.5 times more panels than the rated pump capacity. The farmers could use free solar power between 8 am and 4 pm. The surplus solar power was to be sold to the DISCOM at ₹9 per kWh; but for the first 10 years, the rate of ₹8 per kWh was to be applied to recover the capital cost, interest, and developer profit. In effect, the farmers got free power for irrigation plus ₹1 per kWh for any power evacuated. However, SunEdison withdrew from the project in late 2016, the farmers have not yet been paid by the DISCOM, and the only benefit for farmers now is free daytime power. Besides, the DISCOM meets the RPO obligation and developers save on the cost of land. The project provided no incentive for energy and water conservation nor did it offer an income flow to farmers.

Developer-centred distributed model II*:* A draft policy by the Gujarat government advocates Dhundi-type solar cooperatives, but grants developers capital cost subsidy at ₹41/kWp if they forgo accelerated depreciation benefit under the JNNSM (or ₹34/kWp if they do not) on three times more panels relative to the pump capacity. The panels will be owned by developers for a lock-in period of five years; but the farmers will get one-third of the solar generated power for free, while the developer sells his share to the grid at the agreed upon FiT. The farmers too can sell this power but at 85% of the FiT, with the developer claiming the balance 15%. The farmer gets free power, has some incentive to conserve water and power, and is spared the capital investment. The developer saves on the cost of land, benefits from the attractive capital subsidy offered, and remains the main residual claimant. Besides private developers, the Gujarat policy explicitly allows a Dhundi-type farmer cooperative to participate as a developer, provided farmers invest in three times more panels relative to their pump capacity.

Conclusions and the Way Forward

The key infirmity in developer-centric models 3, 4 and 5 lies in the assumption that saving on land cost will be enough to attract developers to invest in distributed solar plants despite the ambiguous ownership and management conditions these models entail. In our assessment, the developers will expect, besides the capital cost subsidy on offer under the JNNSM, a high FiT (of ₹6–7/kWh or thereabouts, in our estimate) that will cover the cost of (i) providing free power to farmers; (ii) of messier operation and maintenance of distributed solar generation; (iii) of losing scalar economies of utility scale plants; and above all (iv) of high organising, monitoring, vigilance, and transaction cost of dealing with a multitude of farmers (this is important because rampant power theft can turn the economics of these models awry).

Then there are issues specific to each model. In model 3, two to four hectares needed for tail-of-the-feeder one to two megawatt scale feeder plants will involve the additional costs of land as well as professional management, which may make upscaling difficult. In model 5, the question is why would the Ministry of New and Renewable Energy (MNRE) give a developer three times the subsidy a farmer is entitled to, and equally, why would farmers agree to cover three times more land with panels than they need to when they already get free or near-free grid power?

A central issue is that in all developer-centric models, the farmer is a passive recipient of free power in lieu of allowing panels to be laid on his fields. He has no stake in maximising generation nor in cleaning or safeguarding the panels. If the land cost is less than 5% of the cost of a megawatt scale solar plant (Santhanam 2015), why would a developer have his panels scattered over several hundred fields in possession of farmers over whom he has no control? In models 4 and 5, neither farmers nor DISCOM want to control power theft. This will hit developer revenues and he will find it difficult to control theft.

The SPaRC model suffers from none of these infirmities. It is the only model with a fully working pilot in Dhundi, and another one is coming up in nearby Mujkuva village. It is farmer-centric. It has no duality of ownership and management: farmers own solar panels, and their cooperative owns and manages the microgrid. Since farmers are full residual claimants, they will have a stake in efficient management of solar generation and its use. Since power theft will directly reduce their incomes, solar farmers will control theft because, being members of the same community, they are better placed to keep vigilance. The depreciation benefit to solar developers under the JNNSM amounts to around 30% of the capital cost[18] (Ronak and Parekh 2016). For SPICE to become bankable and scalable, all that is needed is a slightly higher capital cost subsidy of around ₹45/kWp to solar cooperatives and a guaranteed FiT of ₹5/kWh. Under such a regime, there is a distinct likelihood that solarising our 15 million grid connected electric tube wells through SPaRC model by itself can deliver 100 GW of our solar target, and in the process transform our groundwater economy and help double farmer incomes.

NOTES

1 The figure reports results for 18 months; however, power purchase facility has been operational only for 12 months—May 2016 to May 2017.

2 A solar panel of 1 kWp will generate 1 kWh only under ideal conditions of insolation and temperature, and less in other conditions.

3 The main problem in Dhundi is that land records have not been updated for generations. As a result, every landholding has numerous registered owners, including some who are long dead and daughters married off in faraway villages. Applying for an electricity connection requires a no objection certificate from all owners, which is extremely difficult.

4 National Dairy Development Board has organised over 1,00,000 dairy cooperatives all over India since 1965.

5 8 hours/day × 360 days × 56.4 kW= 1,62,432 kWh.

6 Given by Gujarat Energy Research and Management Institute and confirmed by MGVCL.

7 1,62,000 units/year × 0.66 × (₹4.5–₹0.7) = ₹4,06,296.

8 The average cost of providing new tube well connections to Gujarat DISCOMs is around ₹2 lakh which rises to ₹3.5 lakh for High Voltage Distribution System (HVDS) connections (GERMI, Gandhinagar).

9 Assuming interest and depreciation cost of this investment at a conservative 10%/year in perpetuity.

10 Renewable energy certificates currently trade at ₹3,500/MWh (see www.iexindia.com). This price may change in future depending on the demand–supply dynamics.

11 Subsidy on grid power saved (₹4 lakh) + amortised cost of connecting tube wells (₹1.2 lakh) + value of REC earned ₹2.8 lakh = ₹8 lakh.

12 0.33 (8 lakh)/52,150 units = ₹5.06/unit.

13 This is currently around ₹3.50/unit (Source: MGVCL).

14 "Partial Budgeting: A Tool to Analyze Farm Business Changes," Iowa State University, Extension and Outreach, https://www.extension.iastate.edu/agdm/wholefarm/html/c1-50.html.

15 Assumed that ₹30/hour is the net income after fuel and maintenance cost.

16 Estimated diesel use to provide 4,536.5 irrigation hours valued at ₹60/litre.

17 These are Punjab, Haryana, Rajasthan, Madhya Pradesh, Gujarat, Maharashtra, Andhra Pradesh, Karnataka, Tamil Nadu, Kerala.

18 If the developer claims 100% depreciation in year one, he will earn tax benefit of ₹40.8 lakh on a capital cost of ₹120 lakh. The 2016 union budget curtailed this benefit somewhat; but the benefit remains nearly the same.

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