

Global Commission to End Energy Poverty

WORKING PAPER SERIES

Abuja Electric's Proposed Sub-Franchising Model: DESSA

AUTHORS

Ignacio Perez-Arriaga, Robert Stoner



Abuja Electric's Proposed Sub-Franchising Model: DESSA

I. PROJECT DESCRIPTION.

The opportunity and the relationship with the Integrated Distribution Framework.

AEDC has developed a strategy named DESSA (Distributed Energy Solutions and Strategy for AEDC) as part of a wider Integrated Distribution Framework (IDF), which aligns its Performance Improvement Plan (PIP) with distributed energy solutions (DERs) that augment grid supply and investments in unserved and under-served areas to more effectively meet its electricity supply mandate and its performance targets. DESSA is inspired by the IDF, since IDF provides a co-ordinated approach to providing electricity through on-grid and off-grid power supply solutions, in order to improve electricity supply and expand access.

DERs could provide the most cost-effective method of improving electricity supply for unserved and underserved customers, either temporarily or on a permanent basis. These DERs include projects such as interconnected mini grids, franchises/concessions, and embedded generation. These solutions could be considered as under-the-grid mini-grids or standalone systems, functioning in symbiosis with the main grid. This technical note briefly describes the DESSA strategy and examines its role within the broad scope of the IDF.

The DESSA concept.

DESSA is aimed at deploying Distributed Energy Resources (DERs) in underserved and unserved areas within the AEDC franchise area. DESSA has been developed to attract needed investments to address technical, commercial and collection losses and to improve the provision of reliable power supply to its customers. DERs are demand- and supply-side resources that can be deployed throughout an electric distribution system to meet the energy and reliability needs of the loads served by that system. DERs can be owned by the user, a third party, or the utility, and can be used for a wide variety of applications. DERs can also provide value through many different services, to utilities, customers, and the broader grid, and this value can be monetized.

Implementation

DESSA is targeted at locations with considerable productive use of electricity and substantial capex requirements combining high willingness and ability to pay for energy with improved service delivery. Indicative demand in each cluster will vary from between 1 MW to 25 MW depending on location and customer archetypes. The approach is expected to provide direct financing to identified projects, which will be operated in partnership with developers that have considerable experience in deploying and developing DERs and/or embedded generation solutions.

The DER strategy for AEDC is targeting the deployment of up to 50 clusters to serve an aggregate energy demand of 100MW. To ensure sustainability and that service improvement impacts a broad spectrum of customers, clusters are considered at low voltage and medium voltage feeder level, including at least an anchor commercial customer in predominately residential areas. For example, a feeder supplying numerous residential customers would at least include a commercial hub or mall as an anchor load. The total capital for this programme is targeted at \$150 million which will be raised from equity and debt financiers.

Specific sites would be selected for DESSA which would complement and not compete with AEDC's grid improvement plans. The projects would undergo a rigorous selection criterion, to ensure that only commercially viable projects are funded. Projects with a strong social mandate may also be considered in the future where viability gap funding is available.

AEDC has built in-house capability through its DESSA desk and entered into strategic partnerships to ensure the success of its DER programme. GIZ (German Development Agency) will provide resources to support the development of feasibility studies and financial models for up to an initial 40 clusters jointly selected by both parties. The United States Trade and Development Agency (USTDA) has granted AEDC a grant of \$1.06m to identify, develop and design business models for AEDC's different customer archetypes and to facilitate fundraising efforts. The United Nations Sustainable Energy for All will potentially provide subsidies/viability gap funding to support less commercially viable areas; particularly where new customer connections are achieved.

Tariffs will not be constrained by the regulated tariff regime in Nigeria MYTO. They will be negotiated under the "willing buyer / willing seller" structure. All customers will be metered under this program, thereby improving the metering levels in the distribution company. It can be assumed that satisfactory reliability and quality of service conditions will be offered to all customers under DESSA.

Financing.

AEDC is considering three possible structures to finance and execute its DER Programme.

- **Fund Structure.** Potential investors commit \$150m to the dedicated DESSA fund. There is a fund manager and funds are disbursed to support specific projects. The fund does not provide a guaranteed return but expected returns will be competitive and in line with investor expectations for this asset class. Each project in the portfolio has to meet pre-established criteria, which are set by the Fund Manager in collaboration with investors.
- **Special Purpose Vehicle (SPV) Holdco.** There is an overall holding company special purpose vehicle (“Holdco SPV”) that raises debt/equity financing from investors. Each project cluster will be set up in a subsidiary non-recourse SPV (“Opcos SPV”). The funds raised at the Holdco SPV level are then on-invested into the various Opcos SPVs established for each cluster. Funds are disbursed by the Holdco SPV to projects that are executed and managed by third party developer/operators. The SPV staff will be required to manage the fund disbursements and overall portfolio of investments and develop partnerships.
- **Asset Company Structure (AssetCo).** This model is very similar to the SPV Holdco. However, it encourages the consortium approach so that a consortium of partners can combine their expertise to deploy a DER successfully and encourages some level of standardization across the project portfolio. The AssetCo may select competent firms to work together with respective expertise in: i) building DERs (an Engineering, Procurement & Construction company); ii) managing & operating the installed DERs; iii) and metering, billing & collections. Each consortium collaborates to deploy DERs in pre-determined sites within AEDC’s franchise area with supervision and financing from AssetCo.

In all cases AEDC commits infrastructure and provides the enabling platform for the successful implementation and establishment of DERs across the pre-selected locations within its franchise areas. The fund is expected to be deployed to commercially viable projects with a target IRR of 13 – 15% in USD terms. Given the long-term horizon of these projects, it would be important to hedge foreign exchange risks by including local currency financing. AEDC is also exploring the possibility of accessing subsidies/intervention to enhance the commercial viability of projects which may not meet the expected IRR threshold but have the potential to make significant social impact.

ABUJA ELECTRIC'S PROPOSED SUB-FRANCHISING MODEL: DESSA

Roles and responsibilities:

AEDC

- Provide grid supply as contracted.
- Some improvement in network infrastructure as required.
- Feasibility studies for identified clusters supported by its development partners.
- Provide information about clusters and potential customers.
- Provide shared technical and commercial services to DERs once operational.

DER developer/operator

- Site data validation.
- Builds and deploys necessary capacity (embedded generation) to ensure improved reliability for customers
- Billing, collections and metering of customers.
- May upgrade network as required to guarantee power supply.
- Negotiate an appropriate tariff to ensure attractive return on investment.
- Operations and maintenance of the DER equipment.

Fund Manager/Holdco SPV Team

- Initial project development and cluster design and selections
- Negotiation of investment terms with developer/operators
- Disbursement of funds to approved projects, upon approval by Investors.
- Ensure that the funds are always sufficient to cover: project development; project financing; projects' operational obligations as per asset and service delivery agreements;
- Monitoring and supervision of projects.

The nature of “partnership” between the fund/facility and the developers needs further examination.

Risks and mitigants¹

Risk of inaccurate sizing. Accurate projections for electricity demand are very difficult to make, yet extremely important for the design and sizing of the electricity generation assets for the cost structure of a DER project.

¹ Some of them do not apply to some of the considered structures.

Execution risk. A risk with a medium probability of occurrence, but relatively high negative impact is the construction completion risk.

Foreign exchange risk. Project-related investments are exposed to fluctuations in foreign exchange rates, if the cash flow of the project is in local currency.

Risk of stranded assets. Risk of developer abandoning the assets due to change in market environment.

Social acceptance risk. One of the tasks of the DER developer is to ensure that the project is well embedded in the sociocultural context of region where the project is built.

Theft and vandalism. Fuel, copper wires, PV panels and other valuable materials or system components, for which there is a secondary market, are in danger of being stolen.

Non-payment of electricity bills. Non-payment of electricity bills by customers could be caused by either inability or unwillingness to pay.

Change in ownership. The board and management of the distribution company (disco) can change due to new business and investment strategies and modifications in regulatory policy.

CASE EXAMPLE: Wuse Market Interconnected mini-grid

The interconnected mini-grid project is aimed at providing reliable and affordable 1MW of hybrid power solution with 0.73MWhrs of lithium ion storage to SMEs in Wuse Market Abuja. The solution will be deployed through three independent hybrid PV solar systems of 450kWp, 350kWp and 200kWp to serve the three distinct segments of the market.

AEDC in partnership with the Rural Electrification Agency (REA) conducted and Energy Audit Market. Following the completion of the Audit, the DER model is currently being developed with Green Village Electricity Projects Ltd, a Developer.

Economic rationale: customer's' willingness to pay for reliability is evidenced by tariff's for alternatives from ₦120 – 300/kWh as against AEDC's average tariff of ₦32/kWh). AEDC stands to also benefit from DUOS charges (₦12/kWh). ATC&C losses have reduced from 28% to 0%. With increased power supply, the revenues, which had a 28% loss, have increased 100%.

This is the first interconnected mini-grid project in Nigeria, partnering with REA, Tesla etc. It has environmental benefits: clean, safe and reliable power supply, reduced emissions, job creation. The project provides proof of concept, increased visibility for AEDC and potential access to funders for other identified locations.

II. COMMENTS

Looking for alternate electrification paths.

No doubt that the Nigerian power sector is in a permanent crisis situation and it seems very difficult that a cure could be found that could turn it into a normal well-functioning and financially viable industrial segment of the economy in a reasonable amount of time.

The Global Commission to End Energy Poverty (GCEEP) has proposed, as a general approach to accelerate electrification processes in developing countries, focusing on the distribution activity, using an Integrated Distribution Framework (IDF), adapting it to the peculiarities of each specific context. However, without giving up this overall objective, it is acknowledged that some countries can adopt the IDF much faster than others. Nigeria, in particular, might need more time and effort than the average, due to its size, complexity, and challenging starting point. The distribution segment of the power sector was privatized a few years ago and the results have not been as positive as expected. Although a full-fledged IDF approach has to be pursued, exploring alternative routes is warranted – with one hard condition – do not let the discos fail. The long-term vision of the power sector – in Nigeria and elsewhere – must rest on a sound distribution company, a creditworthy off-taker, able to deliver reliable, affordable, and clean power to all customers in a given territory.

AEDC proposes a focused effort to build and strengthen its large-consumer base through a business model that can mobilise capital to improve quality of service with a business model that might be viable, albeit without aiming at all customers, at least in a first phase. It is a very initial first step towards ensuring that the disco is on the path towards some form of viability which is important to drive massive electrification. This is the strategy named DESSA (Distributed Energy Solutions and Strategy for AEDC), which aligns with AEDC's Performance Improvement Plan, and can be contemplated as a partial form of implementation of the IDF. DESSA integrates with the main grid distributed energy solutions (DERs), such as interconnected mini grids, franchises/concessions, and embedded generation projects. DERs can augment grid supply and investments in unserved and under-served areas to more effectively provide reliable, affordable and clean electricity supply.

Nigeria has a robust set of regulations that support decentralised energy solutions and thus make possible the DESSA approach: i) embedded generation regulations (2012); ii) independent electricity distribution networks; iii) mini-grid regulation (2017); iv) eligible customers regulations; v) distribution franchising (expected 2020). These are all attempts to create alternatives or complements to the traditional discos' activity, partly using the existing facilities, looking for profitable business opportunities. The key is to provide reliable service for those who value it and are willing to pay for it, getting rid of the present dirty and expensive generation sources or just providing connections for the first time.

Alignment of DESSA with the IDF

The IDF is founded on following a reduced set of principles, which can be adapted to different contexts for implementation: a deep integration of the three modes of electrification, a clear universal electrification mandate for an entity in a territory, permanence of electricity supply that is compatible with a reasonable long term vision of the power sector, harnessing external resources to improve viability of distribution, and integration of electricity supply with productive end-uses.²

DESSA is in line with the main tenets of the Integrated Distribution Framework (IDF). It looks for the mutual support of on- and off-grid solutions, after a thorough analysis of the best opportunities. It looks for viable business models that could stay indefinitely without subsidy support. It resorts to external investors that can bring capital, expertise and good practices. And it has the incentive to promote demand growth by encouraging community and productive uses of electricity, as a critical component of the viability of the business plan. AEDC also monetizes from the incremental revenue generation from DER developments. DESSA brings an innovative approach or version of IDF by proposing a partnership between the incumbent disco and external investors that focus together – via an ad hoc arrangement for specific clusters or areas – without the need for a concession for the entire territory covered by the disco. This has resemblance with the “mini-grids-under-the-grid” approaches that have been proposed elsewhere,³ which also try to make progress in electrification, while being aware of the difficulties of trying to accomplish the final objective all at once.

Because of these difficulties, at least in the initial phase, DESSA leaves aside an essential component of the IDF – universal electrification, in particular for residential customers in rural areas with low and disperse demand – to focus on achieving immediate financial viability with the proposed business plan, centered on locations with considerable productive use of electricity (0.5-20 MW) and high willingness and ability to pay for reliable electrical supply. This however could be incorporated in subsequent phases of the DESSA project.

Given the circumstances, this seems to be a reasonable choice, if the ultimate goal of universal access continues being an objective of the overall plan, even if not included in this phase of the electrification process. DESSA could include, as a secondary objective, the supply of electricity to all residential customers within a given distance or within a given connection cost of the community and productive facilities being electrified. Accordingly, performance-based grants (e.g., from SE4All through UEF or

² Pérez-Arriaga, et. al. (2019), Global Commission to End Energy Poverty: Inception Report, <https://www.endenergypoverty.org/reports>

³ Rocky Mountain Institute (2019), Electrifying The Underserved: Collaborative Business Models for Developing Mini-grids Under the Grid, <https://rmi.org/insight/under-the-grid/>

ABUJA ELECTRIC'S PROPOSED SUB-FRANCHISING MODEL: DESSA

another DFI) could be offered to the DER operator to add new connections within its cluster.

DESSA rightly establishes AEDC as the operator of last resort for the clusters being electrified with this project. This reinforces significantly the sustainability (permanence) of the proposed approach for each one of the clusters being included in the project and it shows the value of the integration of the three modes of electrification.

Is DESSA conducive to a sound long-term vision of the power sector within AEDC's territory, and Nigeria in general? This brings the issue of the freely negotiated tariffs between the DER developers and the customers. Negotiated tariffs introduces flexibility and makes sure that both parties are satisfied with the mutually agreed deal. It facilitates bringing large customers to the grid in the short term. However, there are no regulatory safeguards in the event of future disputes on the tariffs. And the power system will eventually end up with many different tariff regimes in a given concession area.

Is this jeopardizing a sound future vision of the power sector in Nigeria? It is certainly not ideal, but it might not be as bad as it may initially seem. Note that recent regulation from the Nigerian Electricity Regulatory Commission (NERC) seems to be advocating for differentiated tariffs tied to service levels, and DESSA would be well aligned with this. Presently in most countries the individual tariffs for each class of customers are far from cost-reflective⁴ as they contain a substantial amount of cross-subsidization and have been designed ad hoc attending to the final use (e.g. public lighting, agriculture, railway traction, SMEs, large industries, etc.). This is not orthodox regulation, but it is common practice. In Nigeria it can be expected that in the future the discos will deliver reliable supply, and the regulated tariffs will become attractive to the C&I customers that now may opt for the DESSA program in the short to medium term. This will be the time to make transitory arrangements to steer the negotiated tariffs towards more favorable regulated categories.⁵

In its description, it is claimed that in its full implementation DESSA has the potential to be the blueprint for implementing an integrated distribution framework in Nigeria. And the justification goes as follows:

- i) The DER program would improve energy access across AEDC's franchise area and improve customer experience.

⁴ Although in most developed countries the tariffs are *globally* cost-reflective, i.e. they add up to a cost-reflective revenue requirement for the electricity supply.

⁵ The nature of the contracts between the DER operators and the consumers needs to be clarified. If time-bound, then after say 5, 10, or even 15 years, the consortium can dissolve and the disco may become the sole distributor. If the transition is managed well, ideally the end-consumers should not feel a difference from a quality of supply or cost-perspective.

ABUJA ELECTRIC'S PROPOSED SUB-FRANCHISING MODEL: DESSA

- ii) Since DER solutions are not constrained by MYTO regulations, the projects will be able to set tariffs sufficient to earn an acceptable return on capital; linking tariffs with demonstrable service improvement will also improve willingness to pay.
- iii) AEDC's strategy to provide energy for productive use will stimulate growth in SMEs and contribute to Nigeria's economic development.
- iv) Improving power supply with cleaner energy resources within AEDC's franchise areas will eliminate the need for self-generating sets which results in significant emission reductions.

All of these features of the DESSA approach are positive, but they do not guarantee that universal access will be achieved any time in the future, although progress is made in several directions.

Why Nigerian DISCOMs might be interested in the DESSA approach

A very interesting feature of the DESSA initiative is that it is promoted by a disco and it tries to get the disco involved as much as possible in the implementation of this business model. This is in contrast with other initiatives in Nigeria and elsewhere (such as the Universal Electrification Facility, UEF, of SE4All) where off-grid solutions are tried leaving the incumbent discos behind (or just allowing the discos to propose off-grid solutions as one more agent).

This seems to be very good news and a departure from most prior initiatives to promote off-grid solutions, which for the most part have ignored the incumbent discos, assuming they will not be able to get their act together. The proposed regulation by NERC on "distribution franchises" seems to be designed to bypass the discos, only using their wires when necessary (and compensating them for it). We want to understand the advantages of having the discos directly involved in making the DESSA model happen. Therefore, the question that we pose now is: what are the incentives for AEDC to launch an initiative such as DESSA? It seems that the answer has multiple parts:

- i) The clusters can be fed by local embedded generation, but also from the grid when available; at these times AEDC can supply power to the clusters, presumably at a favorable price. AEDC can also charge distribution use-of-system charges (DUOS) as wheeling rates for the use of its network to deliver energy from off grid sources.
- ii) AEDC can be a partner in the special purpose vehicle, or whatever consortium that is formed to supply the selected clusters. However, given the financial situation of the discos – and AEDC in particular – AEDC's equity contribution may not be substantial.

ABUJA ELECTRIC'S PROPOSED SUB-FRANCHISING MODEL: DESSA

- iii) Improvement of the reliability and quality of service, even if not meant for all the demand, is aligned with the objectives of the Performance Improvement Plan (PIP). The presence of local generation, investments in the network and the increased level of engagement with the customers can reduce ATC&C losses significantly.
- iv) Connection to AEDC can potentially reduce capex for customers using DERs (since much of the demand can be met from grid supply, thereby reducing storage needs) by up to 40%, according to the document sent by AEDC.
- v) A portfolio of projects helps diversify the risk compared to single investments and potentially offers more exit opportunities.
- vi) The involvement of the disco in DER projects de-risks the project by ensuring that grid extension planning is considered before such projects are implemented.
- vii) AEDC already has a functioning project of this type (the Wuse market), therefore, the regulatory approval process is expected to be streamlined given AEDC's experience.
- viii) DESSA allows AEDC to take the initiative in accelerating the electrification process in Nigeria. Positive news like this is what the Nigerian power sector badly needs.
- ix) The case of Konexa (see below) shows how the partnership between an IDF-like company (Konexa) and the incumbent disco (KAEDCO) is a promising path towards achieving the financial viability of the entire incumbent disco.

In summary, DESSA agreements clearly can be beneficial to AEDC since it can expand and improve service through third parties to customers that are presently badly serviced, while focusing its internal resources on network improvements, loss reduction and customer retention elsewhere. When successfully carried out these agreements also provide win-win investment opportunities for AEDC and the firms it partners with. The successfully developed and financially viable clusters can strengthen AEDC's overall business model over the long-run. The private sector entity will have secured its return on investments and any residual value of assets and leave once the term ends, like in any concession.

Could DESSA be viable?

Meeting 13-15% IRR expectation in USD terms without any concessional/public financing support may pose a barrier to scale-up. A cluster-by-cluster financial assessment will need to be done to understand if there will be a viability gap, but it might already be wise to ring-fence part of the fund for "viability gap funding" of projects that are "close-to-commercial-terms". For example, the business plan of Tata Power Renewables Mini-grid contemplates addressing the slightly low IRR with concessional

ABUJA ELECTRIC'S PROPOSED SUB-FRANCHISING MODEL: DESSA

equity from Foundations. Already, the AEDC document mentions that SEforAll (possibly through its proposed Universal Electrification Facility, UEF) will provide subsidies to support less commercially viable areas. A major challenge will arise when, in a later phase of the project universal access will be attempted in rural areas, greatly expanding the need for viability-gap funding to be estimated, designed and delivered. This will change the nature of the business plan, which now will be clearly dependent on subsidies to remain financially viable.

In terms of the funding structure, depending on the diversity of the clusters, a highly adaptable structure which aggregates a number of projects would be relevant. In that sense, the SPV or AssetCo structure is perhaps more appropriate, allowing tailor-made consortiums (and financing packages) depending on the need for various DER projects.⁶

The case of Konexa (see below) shows how the partnership between an IDF-like company and the incumbent disco is a promising path towards achieving financial viability of the discos, at least while cross-subsidization between the customers in a selected territory makes it possible to cover the cost-reflective revenue requirement.

A precedent: The case of ECOF Kaduna Ltd (Konexa)

The Nigerian Electricity Regulatory Commission (NERC) has approved the sub-concession agreement between Kaduna Electricity Distribution Company (KAEDCO) and Konexa, an energy Distribution Company (DisCo) registered as ECOF Kaduna Ltd. ECOF Kaduna Ltd (Konexa) shall operate under the electricity distribution license of Kaduna Electricity Distribution Company Plc (KAEDCO) as a sub-concessionaire. This will enable Konexa to render electricity services in selected parts of Kaduna Electric's franchise. Konexa is expected to make investments in network infrastructure that will guarantee 24/7 supply of electricity within the sub-concession area to all customers, roll-out new metering technology, deploy off-grid solutions such as mini-grids and solar home systems to serve unconnected populations, while creating embedded generation capacity. ECOF Kaduna Ltd is expected to accelerate electrification and to improve quality of service to consumers, in alignment with the KEDCO's Performance Improvement Plan (PIP).

ECOF Kaduna Ltd shall be granted operating and investment rights within a ring-fenced area for the provision of electricity supply to consumers for a period sufficient enough to allow for full recovery of investments in the rate base of KAEDCO of the

⁶ Assetco is similar to the SPV and it is not necessarily decentralized. One can still accommodate customized financing packages for each project, but investors find the aggregation of projects more attractive than looking at individual smaller projects.

ABUJA ELECTRIC'S PROPOSED SUB-FRANCHISING MODEL: DESSA

area under concession. An embedded generation license may be implemented to allow ECOF Kaduna Ltd to purchase power bilaterally from 3rd parties, other market participants or own power generation assets.

ECOF Kaduna Ltd shall get bulk energy from KAEDCO at designated trading points and the payments will be securitized. The revenues and financial records of ECOF Kaduna Ltd will be independent of the activities of KAEDCO.

ECOF Kaduna Ltd shall implement cost-reflective revenue requirement subject to consultation with customers and to service level standards approved by NERC and consistent with NERC's tariff methodology. ECOF Kaduna Ltd may contract for the supply of energy to customers on the basis of a "willing buyer / willing seller" tariff regime in the ring-fenced area but within the overall context of its approved revenue requirement.

The major difference between the (conceptual) design of DESSA and Konexa is that DESSA focuses on viable productive use clusters first, leaving the task of providing access to all customers in the territory to a later phase, where (no doubt) subsidies will be needed. By doing so the DESSA approach provides critical risk mitigation to potential investors who are understandably reluctant to invest in the distribution sector in Nigeria and may be a path to quickly unlocking critical investment capital to support the distribution sector. On the other hand, Konexa starts small but uses all three modes of electrification to provide quality access to everybody in its assigned territory. In a second phase, Konexa plans to extend to further territories of Kaduna and Kano Electric, also with the same philosophy of universal access, in line with the IDF principles. Due to the customer mix in the territory covered in the first phase, Konexa will not need subsidies and internal cross-subsidization will allow to cover the cost-reflective revenue requirement fully with the revenue requirement from the tariffs. However, in posterior phases with a larger proportion of rural non-C&I customers the issue of getting guaranteed subsidies will have to be addressed. This is a major common challenge to both DESSA and Konexa: to expand into large rural areas with affordable tariffs. The discussion about subsidies, regulated tariffs, and transitional regimes will have to be explicitly addressed.

How could the GCEEP support DESSA (and Konexa as well)?

- i) GCEEP can help connecting AEDC with other initiatives known to the members of the Commission. Smart Power India, for instance, in its work for the Tata Power Renewables Microgrid project has important points in common with DESSA in its focus on C&I customers. Some members of the Commission have valuable expertise in project financing and the use of geospatial data to identify potential clusters. The GCEEP research team is in contact with departments in key DFIs and large initiatives like the African Union / European Union Alliance

ABUJA ELECTRIC'S PROPOSED SUB-FRANCHISING MODEL: DESSA

for clean energy and jobs, who are looking for investment opportunities in new business models approaches to electrification.

- ii) It was suggested at the GCEEP Bellagio meeting the convenience of helping to create a large pipeline of investable projects, inviting the development banks to create a fund for this purpose to be available to interested investors
- iii) Both the DESSA and Konexa initiatives are clearly benefiting the productive industry and therefore they should have access to national or state productive policy measures and programs. In this way, they might attract and apply concessionary capital from those of their investors (i.e., IDA or the World Bank, or AfDB) to make certain opportunities viable that would not otherwise be – for instance by making low interest loans or grants to small industry to purchase equipment or hire workers. These are in a sense already widely practiced job creation schemes all over the world, and linking them in developing countries to this symbiotic opportunity with affordable electrification is worthwhile, and in fact intrinsic to the IDF ethos.
- iv) Just the dissemination of the existence of these initiatives and their alignment with the objectives of the GCEEP among the Commission members and using the media capabilities of the Rockefeller Foundation and MIT.