

Viet Nam Energy Partnership Group

TECHNICAL WORKING GROUP 4: ENERGY ACCESS

REPORT OF THE 2ND MEETING

Date: 26 September 2018
Location: MOIT meeting room 101, 25 Ngo Quyen, Hanoi
Time: 14.00 - 16.15

Key agenda points:

- To update members on current developments and ongoing projects/activities in the access to energy sector
- To discuss EVN's off-grid and access to energy activities (EVN presentation) as well as biogas for rural areas and the results-based financing approach (SNV presentation)
- To discuss TWG4 policy recommendations to the VEPG High-Level Meeting.

Chair and Co-Chair:

- **Mr. Nguyễn Duy Hòa**, Director Power Grid Division, Electricity and Renewable Energy Authority (EREA), Ministry of Industry and Trade (MOIT)
- **Mr. Koen Duchateau**, Head of Cooperation, EU Delegation to Vietnam

Agreed Conclusions and Actions: (See next page)

Agenda: See Annex 1

Participants: See Annex 2

Minutes: See Annex 3

Inputs: See Annex 4 -

4.1 Policy Recommendations

4.2 Presentations (VEPG Secretariat, EVN, SNV)

AGREED CONCLUSIONS AND ACTIONS:

Conclusion / Decision	Action
<ul style="list-style-type: none"> The Chairs thanked all TWG 4 participants for joining and for the very active and constructive participation and the inputs and comments to the draft TWG 4 Policy Paper in particular. The Chairs and the Secretariat will consider all inputs and suggestions during the revision and finalization of the TWG 4 Policy Paper and make sure that all relevant thoughts and inputs from the group will be considered properly. The final paper will be sent to members for their information (no further round of agreement) and subsequently be submitted to the Steering Committee for consideration and further preparation for the HLM. <i><u>Note from the Secretariat:</u> Please find the final paper approved by the TWG chairs and the VEPG Steering Committee in Annex 4.1.</i> 	Chairs, Secretariat
<ul style="list-style-type: none"> MoIT appreciated all comments from TWG 4 members on the MoIT update on the Rural Electrification Programme and the presentation of EVN on the same topic and will consider them for the further development and implementation of the programme. 	MoIT/EREA
<ul style="list-style-type: none"> TWG 4 members discussed and reflected on the SNV presentation on biogas development. The topic will be included in the TWG 4 Policy Paper. The Chairs and the Secretariat agreed on following up with this important topic in future TWG 4 meetings and inform members on new developments. 	Chairs, Secretariat
<ul style="list-style-type: none"> The Chairs and the Secretariat will consider the date for the next meeting and inform the members as soon as possible (next meeting most probably in March 2019). 	Chairs, Secretariat

ANNEX 1 - AGENDA

13:30-14.00	Registration
14:00-14:10	Opening Remarks <ul style="list-style-type: none"> • Mr. Nguyễn Duy Hòa • Mr. Koen Duchateau
14.10-14.15	Introduction of the new secretariat <ul style="list-style-type: none"> • Secretariat: Brief introduction and report
14.15-14.30	Update of TWG4's new initiatives/ongoing projects <ul style="list-style-type: none"> • MoIT/Chair: Update on final draft of Rural Electrification Programme • Participants: Brief update on new initiatives/projects after 1st meeting
14.30-15:00	Presentation: EVN projects and activities in off-grid/rural areas <ul style="list-style-type: none"> • Ms. Bùi Thúy Quỳnh, EVN: presentation with Q&A and plenary discussion
15.00-15.30	Presentation: SNV's biogas program and "Results-based Financing" approach <ul style="list-style-type: none"> • Mr. Bastiaan Teune, SNV: presentation with Q&A and plenary discussion
15.30-16.00	Discussion of TWG 4 Policy Recommendations to the HLM <ul style="list-style-type: none"> • Co-Chair: presentation of draft Policy Recommendations (draft issue paper was provided prior to the meeting) • Q&A; discussion and decision on key recommendations
16.00-16.15	Closing Remarks <ul style="list-style-type: none"> • Mr. Nguyễn Duy Hòa • Mr. Koen Duchateau

ANNEX 2 - Participants

Co-chairs

- **Mr. Nguyễn Duy Hòa**, Director Power Grid Division, Electricity and Renewable Energy Authority (EREA), Ministry of Industry and Trade (MOIT)
- **Mr. Koen Duchateau**, Head of Cooperation, EU Delegation to Vietnam

Participants

- **Mr. Dinh Duy Phong**, EREA
- **Ms. Bùi Thúy Quỳnh**, EVN, Dep. Head of Business Department
- **Mr. Tran Van Ngot**, Dep. Director of Industry Economic Department, MPI
- **Ms. Nguyễn Thị Hà**, Green Innovation and Development Centre (GreenID)
- **Mr. Trần Đình Sính**, Green Innovation and Development Centre (GreenID)
- **Ms. Pham Cam Nhung**, Sustainable Energy Program, WWF
- **Mr. Shand Theo**, SNV
- **Ms. Alison Rusinow**, SNV
- **Mr. Bastiaan Teune**, SNV
- **Mr. Antoine Vander Elst**, EU Delegation to Vietnam
- **Mr. Nguyen Hoai Nam**, Australia Embassy
- **Mr. Sven Ernedal**, German International Cooperation, GIZ
- **Mr. Vo Thanh Tung**, German International Cooperation, GIZ
- **Mr. To Thai**, German International Cooperation, GIZ
- **Ms. Vu Chi Mai**, German International Cooperation, GIZ
- **Ms. Lam Thanh Van**, German International Cooperation, GIZ
- **Mr. Vũ Quang Đăng**, ADB

VEPG Secretariat

- **Mr. Rainer Brohm**, VEPG Secretariat
- **Ms. Nguyen Phuong Thao**, VEPG Secretariat
- **Ms. Ngo To Nien**, EU TAF for SE4All Project
- **Ms. Vu Minh Hien**, VEPG Secretariat
- **Ms. Dang Thi Huong Lan**, VEPG Secretariat
- **Ms. Nguyen Lan Chi**, German International Cooperation, GIZ
- **Ms. Pham Thi Lan Phuong**, VEPG Secretariat

ANNEX 3 - SUMMARY MINUTES

Agenda item	Summary
Opening remarks, overview of the agenda	The <u>Chair and Co-Chair</u> welcomed participants and encouraged everyone to actively join the discussion on the agenda topics and the policy recommendations of TWG 4 in particular.
Introduction of the new Secretariat	<p><u>The new Secretariat team</u> introduced themselves and outlined the following:</p> <ul style="list-style-type: none"> • Rainer Brohm, the new International Coordinator, started in August and is currently taking over the activities of the former Secretariat team. • Ms. Nguyen Phuong Thao has joined the team beginning of September as a Senior Project Officer. Another Junior Project Officer will join beginning of October (Mr. Do Quang Nhat). (<i>See PPT presentation in Annex 4.2</i>) • The Secretariat further outlined that the new VEPG website (www.vepg.vn) will feature VEPG partner projects and events in a news section. Thus, all VEPG partners and TWG members are encouraged to inform the Secretariat about new projects and milestones in ongoing projects or about upcoming events so they can be featured on the VEPG website. <p><u>The Secretariat</u> presented the tentative workplan and timeline for the TWGs, Steering Committee and High-Level Meeting:</p> <ul style="list-style-type: none"> • The Steering Committee (SC) is tentatively scheduled for the first week of October (3-5 Oct). The High-Level Meeting (HLM) is tentatively scheduled for beginning of November (6-8 Nov). • Following this, all TWGs have been asked to hold their second meetings until mid-September. Policy recommendations should be developed by TWGs and submitted to the SC latest by end of September.
Update of TWG 4's new initiatives/ ongoing projects	<p><u>TWG 4 Chair Mr. Hoà, EREA/MoIT</u> gave an update on the final draft of the Rural Electrification Programme:</p> <ul style="list-style-type: none"> • EREA reported to the Prime Minister with a feasibility report on Rural Electrification to get approval for the 2016-2020 Programme. EREA is coordinating with MPI on this. • On August 26, 2018 the Prime Minister held a cabinet meeting where he received feedback from the ministries. • The Government Office gave notification for the Prime Minister to revise the feasibility report. • Main directions from the Prime Minister were the following: <ul style="list-style-type: none"> ○ There was a change in the funding composition: 30,116 bln VND for 48 provinces, only change: investment owner will be EVN. The Prime Minister asked MoIT and MPI to carefully revise the programme accordingly.

	<ul style="list-style-type: none"> ○ Regarding the funding mobilization mechanism: since Viet Nam is now a low-middle income country, access to ODA sources is very limited. Instead there is the need to mobilize concessional loans/soft loans from international funding agencies. MoIT proposed mechanisms to allow access to soft loans/concessional loans. The Prime Minister assigned MPI/MoIT to include new mechanisms to mobilize society funding (any domestic sources, “Socialization” as a new mechanism). • The revised draft report will soon be submitted to the Prime Minister (MoIT and MPI will work together to improve the draft and submit to the Prime Minister for approval). <p><u>TWG 4 members</u> gave updates on their activities and ongoing projects:</p> <ul style="list-style-type: none"> • The EU paid a first 40 million EUR (grant) fixed tranche of their energy sector budget support programme that focuses on rural electrification. • GIZ is preparing for a verification of new counters (newly connected households) installed in 2017 in the context of the Rural Electrification Programme within the framework of the EU-Vietnam Energy Facility (EVEF). 15,000 new grid-connected counters was the target for the year 2017 under EU's budget support programme. With the assistance of a consultant at least 1,500 connections will be verified through photos and interviews. GIZ is also supporting EREA in reviewing the existing policy and regulation to support off-grid projects and technical guidelines (until 2021). • ADB reported on one project together with EVN on rural grid extension and small hydropower, which was completed last year. Furthermore, ADB has one pending project on rural electrification in the pipeline (pending because of debt ceiling). • SNV reported on a new funding round for two more years of their biogas programme with a new partner (Carbon Finance). <p><u>The Chairs</u> concluded this agenda topic by thanking the participants for their updates and announced that this topic will also be further discussed in the context of the subsequent discussion of policy recommendations.</p>
<p>Presentation: EVN projects and activities in off-grid/rural areas</p>	<p><u>EVN</u> presented an overview of the current status and outlook of rural electrification and EVN activities in that context. [<i>PPT presentation of Ms. Quynh, see Annex 4.2</i>]. Some key information/messages are summarized as follows:</p> <ul style="list-style-type: none"> • About 200,000 households have no access to the national grid, and about 1,000,000 households have a connection with a power supply insufficient for their needs. • There is a need for a budget decision by the government to finance rural electrification.

	<ul style="list-style-type: none"> • EVN can also mobilize funding from international organisations (ADB, KfW, WB etc.) and domestic sources. • There used to be strong international support for rural electrification, including 2 trillion VND from WB, which is highly appreciated by EVN. • However, more stakeholders need to be involved in the process. EVN has been at core of the process. There is a need for a comprehensive approach with sound and appropriate targets and timelines for the different activities and stakeholders. • How can the remaining 2% of the households obtain access to electricity? There is a need to diversify the energy mix and introduce renewable energy options. Grid extension is too expensive in some cases, but there might be off-grid RE potential that has not been considered yet. The recommended approach is to identify the best technical and management model for each case. • Off-grid communities are worried about the sustainability of off-grid RE solutions and they normally/initially prefer grid connection. Thus, we need to study each case carefully and develop policy recommendations for off-grid RE solutions as well. <p>Summary of the main comments and reflections of <u>TWG 4 members</u> regarding the EVN presentation:</p> <ul style="list-style-type: none"> • Households with poor quality electricity supply during daytime need to use other fuels for cooking which have additional negative health effects. Thus, there is a need for clean electricity supply solutions. • Only 20% of the funds necessary to provide energy access to the last 2% of the population is available. EVN's current funding is not sufficient. EVN is owner of 33 projects in 27 provinces, while for the other projects (in 48 provinces in total) the provincial governments are the owners. • <u>MPI representative</u>: Only 20% of the required funding is secured right now. A key constraint is the public debt ceiling that prevents the government from taking on further loans. It is difficult to justify using public funds for grid extension to remote households due to limited electricity demand and comparatively low-income households. Thus, we need to explore RE solutions and mobilize off-grid RE investments with support of the DPs (biomass in the North, solar and wind in the South). The Government can support PPPs within the legal framework to support SMEs and to mobilize private sector investments. In total 1.5 billion USD is needed for Programme 2081.
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	<p><u>The Chairs</u> concluded this agenda topic by thanking Ms. Quynh for the presentation and all TWG 4 members for the good discussion and valuable inputs.</p>
<p>Presentation: SNV's biogas program and "Results-based Financing" approach</p>	<p><u>SNV</u> presented an overview of the SNV biogas programme and the Results Based Financing (RBF) approach. [<i>PPT presentation of Mr. Bastiaan Teune, see Annex 4.2</i>]. Some key figures/messages from the presentation:</p> <ul style="list-style-type: none"> • About 30% of Vietnam's energy consumption is biomass fuel for cooking. • Average Greenhouse Gas Emissions (GHG) per household are 3t CO₂ per year. • 45,000 people die from hazardous cooking fire smoke every year (cooking on an open cook stove has a similar negative health effect as smoking 2 packages of cigarettes per day). Affected are mainly women and children. • In Vietnam's NDC there is a national target for rural biogas digesters: 50,000 biogas digesters per year but in the last years max 25,000 were installed per year. • The Results Based Financing (RBF) tool has proven to be successful in many ways. <p>Summary of the main comments and reflections of <u>TWG 4 members</u> regarding the SNV biogas presentation:</p> <ul style="list-style-type: none"> • It would be interesting to explore if and how RBF could be used for other technologies (e.g. in Tanzania there was a programme on solar-home-systems using a RBF tool). • Regarding the issue of inter-agency coordination: The biogas programme was run by MARD, with rather low priority given to energy related effects. The question is how to connect/relate such programmes to MoIT and VEPG activities. • The bioenergy Feed-in-Tariff (FiT) is not sufficient for these biogas applications (biogas is only used for cooking not for electricity supply since this is not attractive financially). A revised and more attractive FiT for small scale biogas digesters would be a strong incentive for farmers to invest (a FiT is also a form of RBF!). • EVN grid extension in some rural areas is not economically feasible, thus biogas electricity generation could be a good alternative. • <u>The Chairs</u> concluded this agenda topic by thanking Bastiaan Teune for the presentation and all TWG 4 members for the good discussion and valuable inputs. The topic will be represented in the policy recommendations paper and the Chairs with support of the Secretariat will make sure that all comments are well represented in the final paper.
<p>Discussion of TWG 4 Key Policy Recommendations to the HLM</p>	<p><u>The Co-chair</u> presented the draft issue paper on "Key Policy Recommendations for TWG 4" that was developed between Chair and Co-Chair with the support of the Secretariat.</p>

	<p>Summary of the <u>main comments of TWG 4 members</u> on the draft:</p> <p>1. Financing for increasing electricity access</p> <ul style="list-style-type: none"> • There are some barriers relating to cross-cutting issues and inter-agency coordination. One of them is the challenge to convert land from “special-use forests” and “protection forest” to “construction land” as a barrier for land clearance for electrification projects. However, this is not a key responsibility of MoIT and should be addressed in other contexts (provincial responsibility, National Assembly). • RBF is a new mechanism that should be explored further. MARD has a livestock programme to develop biogas digesters, inter-agency coordination needs to improve. • It should be further explored if the Vietnam Energy Efficiency Programme has any links to biogas at household level. • Looking at the public financing gap it is essential to encourage private sector investments, which should be addressed in the policy recommendations. • There should be a FiT revision for biogas. This should also be addressed in the policy recommendations with a suggestion to MoIT to further consider the biogas FiT. <p>2. Mini-grids</p> <ul style="list-style-type: none"> • There is a need to open up for alternative off-grid solutions. A site-specific approach is needed, not one technical solution that fits for all cases. <p>3. Biomass and biogas</p> <ul style="list-style-type: none"> • No further comments. <p><u>The Chairs</u> concluded this agenda topic as follows:</p> <ul style="list-style-type: none"> • The Chair and Co-Chair will revise the draft policy recommendations paper according to the above discussed valuable inputs from TWG 4 members. • Further comments can be sent to the Secretariat in written form until end of next week (Friday, September 28). • The Chairs will then discuss and adopt the revised paper to make sure that all relevant thoughts and inputs from the group have been considered properly. • The final paper will be sent to members for their information (no further round of agreement) and subsequently be submitted to the Steering Committee for consideration and further preparation for the HLM (<i><u>note from the Secretariat: Please find the final paper approved by the TWG chairs and the VEPG Steering Committee in Annex 4.1</u></i>).
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Conclusions, agreements, closing remarks	<p><u>The Chairs</u> concluded the meeting with the following remarks:</p> <ul style="list-style-type: none"> • The Chairs thanked everybody for joining and for the very active and constructive participation. • The Chairs and the Secretariat will consider all inputs and suggestions when revising and finalizing the Policy Paper but also for the future development of the work agenda of TWG 4. • The Chairs and the Secretariat will consider the date for the next meeting and inform the members as soon as possible (most probably after TET holidays end of February / early March 2019).
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ANNEX 4.1 – ISSUE PAPER ON POLICY RECOMMENDATIONS MONITORING MATRIX

(The issue paper on recommendation was approved by the Co-chairs of the TWG and the Steering committee at the 3rd meeting of the Steering Committee on 05/10/2018)

VEPG - Technical Working Group No. 4 – Energy Access

Issue Paper on Policy Recommendations

1 Objective of this paper

In the Steering Committee Meeting of 11.07.2018, the Chair VM Vuong, and the Co-Chair EU Ambassador Angelet asked the TWG Co-Chairs to agree on specific policy recommendations in time for the Steering Committee Meeting in early October 2018. Recommendations would then be endorsed by the Steering Committee and presented at the High-Level Meeting tentatively scheduled in early November 2018.

In its first meeting, TWG 4 agreed on the following priority topics for 2018/2019:

- Financing for increasing electricity access
- Mini-grids in remote areas
- Biomass and biogas (for cooking)

2 Background

Viet Nam adopted the Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development, including “Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all”. The specific socioeconomic and political conditions in any given country determine whether access to energy actually improves, including through rural electrification. A major challenge for achieving full energy access is not technical constraints, but the level of political backing and prioritization among competing development needs. Key factors for progress include a strong and continued commitment of all stakeholders; clearly defined responsibilities for all stakeholders (central, local authorities and communities); dedicated budget or donor allocations and effective channels of coordination and procedures.

With respect to access to electricity, Viet Nam's Government prioritized rural electrification and took major steps to make it a reality. Currently, about 98% of communities are connected to the national grid, which is very high by international comparison.

With respect to access to energy for cooking, efficient cookstoves and household-level biogas digesters are spreading in Viet Nam and at the same time contributing to reduction of indoor air pollution.

Nevertheless, access to both forms of energy can improve further.

3 Financing for increasing electricity access

3.1 Current status / where we are in the process

Rural electrification is one of the top priorities of the government of Vietnam, as it plays a pivotal role in socio-economic development, including in remote rural areas. Vietnam is one of the most successful countries in the world in terms of improving electricity access for the population.

At present, the targeted programme on electricity supply to rural, mountainous and island areas (Decision 2081) aims to develop electricity grids for medium and small-scale irrigation pumping stations, aquaculture, increased electricity supply to islands and off-grid areas through the national grid or off-grid renewable energy sources between 2015 and 2020. The target for 2020 is that most rural households have access to electricity, including 57 communes, 12,140 villages and 1,288,900 households. However, as of the end of 2015, only 40 communes, 2,250 villages and 165,828 households were supplied with electricity. There is still a significant number of 1,090,900 households without access to electricity, with only two years left to complete this programme. This requires a great deal of effort and resources from a wide range of stakeholders, with innovative solutions needed to meet power demands in the face of many obstacles and limited resources.

3.2 Key challenges

- The State budget allocated for the implementation of the targeted programme on electricity supply to rural, mountainous and island areas (Decision 2081) is insufficient.
- The current public debt ceiling policy (65% of GDP) applied by the Government restricts the possibility to borrow and/or guarantee new loans provided by Development Partners.
- Vietnam's middle-income country status prevents access to concessional ODA loans.

- The current legal framework does not encourage/incentivize EVN or local authorities to invest in providing electricity in remote areas.
- Further challenges exist that address multiple administrative levels or cross-cutting sectors. One of them is the challenge to convert land for “special-use forests” and “protection forest” to “construction land” as a barrier for land clearance for electrification projects.
- Currently, small-scale biogas production is merely used for cooking/heating purposes and not a competitive source for electricity generation.

3.3 Recommendations for further action and/or further support needs in the sector

- Increase State budget allocations for the rural electrification programme.
- Develop a policy to promote independent power supply systems for off-grid areas.
- Encourage and facilitate the implementation of new financial mechanisms in the energy sector, such as blending ODA grants with loans or results-based financing (RBF) schemes, which has proven to generate positive results in various countries.
- Develop an incentive mechanism to encourage private investments to unlock additional non-state budget and non-ODA funding potentials in remote areas.
- Consider a Feed-in-Tariff (FiT) for biogas, which could incentivize farmers or other private sector stakeholders to invest in this renewable energy source (this topic should also be discussed in TWG1).

4 Mini-grids in remote areas

4.1 Current status / where we are in the process

- Worldwide, the technology to install and operate off-grid power systems is mature and has been simplified. At the same time, the price of the equipment has greatly decreased.
- Few mini-grid pilot projects have been deployed in rural areas by CSOs and private operators.
- Under the targeted programme on electricity supply to rural, mountainous and island areas (Decision 2081), off-grid projects are identified in different provinces. Investment decisions for two pilot projects to provide off-grid renewable energy in Cao Bang Province and Bach Long Vy Island are expected to be approved in 2018.
- 26 additional off-grid power systems projects are identified under Decision 2081. However, these 26 projects are only at pre-feasibility study stage.

4.2 Key challenges

- Mini-grid performance is challenging in areas without hydropower potential.
- Experience with hybrid (solar PV / diesel generator) mini-grids is limited and these systems are faced with local operation and maintenance challenges;
- Limited productive use of electricity from mini-grids, resulting in community preference for more versatile grid connection.
- High initial investment costs (lack of debt and equity funding)
- Facility management issues, including lack of revenue to cover for operation and maintenance.

4.3 Recommendations for further action and/or further support needs in the topic area

- Since there is no one single solution that fits all needs, a site-specific approach should guide the selection of technical solutions (independent power systems, hybrid systems, mini-grids etc.). A study on the specific electricity needs in a given region/area (mountainous/island, soon-to-be connected to the grid or not, fully off-grid or connected but low-quality power supply etc.) could be a first step to define if mini-grids or other solutions are suitable and most cost-effective.
- Draw lessons from international experience with mini-grids (e.g. India, Philippines).
- Closely monitor the pilot projects in Cao Bang Province and Bach Long Vy Island in order to draw lessons for replication.
- Prioritize off-grid projects identified in the targeted programme on electricity supply to rural, mountainous and island areas (Decision 2081). Conduct feasibility studies and allocate State budget for implementation.
- Combined with vocational training of rural workers, organize training courses for local people to expand their knowledge and provide basic skills for installation, operation and maintenance of renewable energy systems. This will also create more employment opportunities for the local labor force.

5 Biomass and biogas (for cooking)

5.1 Current status / where we are in the process

Biogas digesters at household level have been promoted widely in Viet Nam, and in some cases the technology is applied / spreading commercially, i.e. without support from Government or development projects, but this has not yet developed everywhere. Efficient cookstoves for the use of

biomass including agricultural residues have also been promoted widely and some are being supplied commercially by small and medium enterprises, but these have also not yet used universally. Larger scale application of biogas digesters and cookstoves would improve cooking fuel availability and cooking convenience, reduce work pressures for women, deliver a better (in-door) environment, provide organic fertilizer for gardens (in the case of biogas), and reduce greenhouse gas emissions. However, despite multiple advantages, the equipment is not always optimally used, and uptake is still limited. The barriers to further uptake include perceived costs to low-income households and technical aspects.

5.2 Key challenges

- **Administrative procedures related to Public-Private Partnerships (PPP):**
 - Legal hurdles for public financing of private entities
 - PPP law in the making for many years without final outcome
 - Bureaucracy demands meticulous planning, no flexibility
- **Harmonization:**
 - Biogas programmes by SNV, WB and ADB have different subsidy levels
 - Geographical overlap
- **Enterprises** require dedicated training
 - Not all participating enterprises take advantage
- **Quality control:**
 - Verification is critically important and requires dedication
 - Remote areas are costlier and demanding

5.3 Recommendations for further action and/or further support needs in the topic area

- Promote a nationwide biogas sector approach. A national programme where financial resources would be merged would ensure a common approach, goal and strategy (this topic should also be discussed in TWG 2 on Energy Efficiency and Conservation).
- Establish one harmonization and coordination mechanism to oversee all biogas initiatives. Such mechanism would contribute to get a comprehensive vision of biogas development in Viet Nam and assess remaining market opportunities.
- Facilitate and promote access to the Green Climate Fund (GCF) and other public climate funds to ignite markets and de-risk investments.

ANNEX 4.2 – PRESENTATIONS



Viet Nam Energy Partnership Group

Technical Working Group 4 – Access to Energy

2nd Meeting - 26. September 2018
 EREA/MoIT, Hanoi

Nguyen Duy Hoa
 Director of Power Grid Division
 EREA/MoIT
 Chair of Technical Working Group 4

Koen Duchateau
 Head of Cooperation
 EU Delegation to Vietnam
 Co-Chair of Technical Working Group 4

Agenda

VEPG TWG 4
 Access to Energy

Time	Subject
14.00-14.10	1. Opening remarks, overview of the agenda <ul style="list-style-type: none"> Mr. Nguyen Duy Hoa / Mr. Koen Duchateau
14.10-14.15	2. Introduction of the new VEPG secretariat <ul style="list-style-type: none"> Secretariat: Brief introduction and report of secretariat
14.15-14.30	3. Update on TWG 4's new initiatives/ongoing projects <ul style="list-style-type: none"> MoIT/Chair: Update on final draft of Rural Electrification Programme Participants: Brief update on new initiatives/projects after 1st meeting
14.30-15.00	4. Presentation: EVN projects and activities in off-grid/rural areas <ul style="list-style-type: none"> EVN: Presentation with Q&A and plenary discussion
15.00-15.30	5. Presentation: SNV's biogas programme and „Result-based Financing“ <ul style="list-style-type: none"> Bastiaan Teune: Presentation with Q&A and plenary discussion
15.30-16.00	6. Discussion of TWG 4 Policy Recommendations to the HLM <ul style="list-style-type: none"> Co-Chair: Presentation of draft Policy Recommendations Q&A, discussion and decision on key recommendations
16.15-16.30	7. Conclusions, agreements, outlook on next meeting, closing remarks <ul style="list-style-type: none"> Mr. Nguyen Duy Hoa / Mr. Koen Duchateau

2. Introduction Secretariat

VEPG TWG 4
Access to Energy

New VEPG Secretariat (GIZ team)

- **Rainer Brohm**, International Coordinator
- **Ms. Nguyen Phuong Thao**, Project Officer
- **Mr. Do Quang Nhat**, Junior Project Officer (start 1.10.)



Contact:

VEPG Secretariat
c/o EREA / MoIT
23 Ngo Quyen

Email: vepg.group@gmail.com (soon to be changed – secretariat@vepg.vn)
Website: coming soon...

2. Introduction Secretariat – Update on Timeline

VEPG TWG 4
Access to Energy

1st TWG meeting **4 April 2018**

- Discussion of key challenges for the Access to Energy sector
- Discussion and agreement on priority topics
- Agreement on work plan and tasks

2nd TWG meeting **26 September 2018**

Topics:

- Update on Rural Electrification Programme
- Update on EVN activities
- Focus on Biogas for rural areas
- **Policy recommendations to HLM**



Steering Committee meeting
Tentative date:
5 October 2018



2nd High-Level meeting
Tentative date:
6-8 November 2018

3rd TWG meeting Tentative date: tbd (Dec 2018/Mar 2019?)

Proposed topics:

- tbd
- (...)



3rd High-Level meeting
Tentative date:
(Jun/Oct 2019?)

3. Update on TWG 4 Activities/Projects

VEPG TWG 4
Access to Energy

MoIT/EREA: Update on Rural Electrification Programme

All Participants: Update on new initiatives/ongoing projects

- Plenary discussion

4. Input: EVN Activities

VEPG TWG 4
Access to Energy

EVN: Presentation on off-grid and rural area activities

- EVN input, Q&A, discussion

5. Input: SVN Biogas Programme

VEPG TWG 4
Access to Energy

Bastian Teune/SNV: The rural biogas programme and „Results-based Financing“ approach

- Presentation, Q&A, discussion

6. Discussion of TWG 4 Policy Recommendations

VEPG TWG 4
Access to Energy

Key topics / recommendations

- 1. Background**
- 2. Financing for increasing electrification**
 - Key challenges and recommendations
- 3. Mini-grids in remote areas**
 - Key challenges and recommendations
- 4. Biomass and biogas (for cooking)**
 - Key challenges and recommendations

6. Discussion of TWG 4 Policy Recommendations

VEPG TWG 4
Access to Energy

P. 1

Background

Viet Nam adopted the **Sustainable Development Goals (SDGs)** of the 2030 Agenda for Sustainable Development, including “**Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all**”. The specific socioeconomic and political conditions in any given country determine whether access to energy actually improves, including through rural electrification. A major challenge for achieving full energy access is not technical constraints, but the level of political backing and prioritization among competing development needs. Key factors for progress include a strong and continued commitment of all stakeholders; clearly defined responsibilities for all stakeholders (central, local authorities and communities); dedicated budget or donor allocations and effective channels of coordination and procedures.

With respect to access to electricity, Viet Nam's Government prioritized rural electrification and took major steps to make it a reality. Currently, about **98% of communities are connected to the national grid**, which is very high by international comparison.

With respect to access to **energy for cooking, efficient cookstoves** and household-level **biogas digesters** are spreading in Viet Nam and contributing at the same time to a reduction of indoor air pollution.

Nevertheless, **access to both forms of energy can improve further**.

6. Discussion of TWG 4 Policy Recommendations

VEPG TWG 4
Access to Energy

P. 1

Financing for increasing electricity access

Current status / where we are in the process

Rural electrification is one of the **top priorities** of the government of Vietnam, as it plays a pivotal role in socio-economic development, including in remote rural areas. Vietnam is one of the most successful countries in the world in terms of improving electricity access for the population.

At present, the targeted programme on electricity supply to rural, mountainous and island areas (**Decision 2081**) aims to develop electricity grids for medium and small-scale irrigation pumping stations, aquaculture, increased electricity supply to islands and off-grid areas through the **national grid** or **off-grid renewable energy sources** between 2015 and 2020.

The **target for 2020** is that most rural households have access to electricity, including 57 communes, 12,140 villages and 1,288,900 households. However, as of the end of 2015, only 40 communes, 2,250 villages and 165,828 households were supplied with electricity. There is still a significant number of **1,090,900 households without access to electricity**, with only two years left to complete this programme. This requires a great deal of effort and resources from a wide range of stakeholders, with innovative solutions needed to meet power demands in the face of many obstacles and limited resources. To be updated if data is available.

6. Discussion of TWG 4 Policy Recommendations

VEPG TWG 4
Access to Energy

P. 2

Financing for increasing electricity access

Key challenges

- The **State budget** allocated for the implementation of the targeted programme on electricity supply to rural, mountainous and island areas (Decision 2081) is **insufficient**.
- The current **public debt ceiling policy** (65% of GDP) applied by the Government **restricts** the **possibility to borrow and/or guarantee new loans** provided by Development Partners.
- The **middle income country status** of Vietnam **prevents the access to concessional ODA loans**.
- The **current legal framework** does **not encourage/incentivise** EVN or local authorities **to invest** in providing electricity in remote areas.

6. Discussion of TWG 4 Policy Recommendations

VEPG TWG 4
Access to Energy

P. 2

Financing for increasing electricity access

Recommendations for further action and/or further support needs in the sector

- **Increased State budget allocations** for the rural electrification programme.
- A policy to **promote independent power supply systems** for off-grid areas should be developed.
- **New financial mechanisms** such as blending ODA grants with loans or results-based financing (RBF) schemes provide positive results in various countries. The implementation of such mechanisms in the energy sector should be encouraged and facilitated.

6. Discussion of TWG 4 Policy Recommendations

VEPG TWG 4
Access to Energy

P. 2

Mini-grids in remote areas

Current status / where we are in the process

- Worldwide the **technology** to install and operate **off-grid power systems** is **mature** and has been simplified. At the same time, the **price of the equipment** has greatly **decreased**.
- **Few mini-grid pilot projects** have been **deployed in rural areas** by CSOs and private operators.
- Under the targeted programme on electricity supply to rural, mountainous and island areas (Decision 2081), **off-grid projects are identified in different provinces**. Investment decisions for **two pilot projects** to provide off-grid renewable energy in **Cao Bang Province** and **Bach Long Vy Island** are expected to be approved in 2018.
- **26 additional off-grid power systems projects** are **identified** under Decision 2081. However these 26 projects are **only at pre-feasibility** study stage.

6. Discussion of TWG 4 Policy Recommendations

VEPG TWG 4
Access to Energy

P. 3

Mini-grids in remote areas

Key challenges

- **Mini-grid performance** is **challenging** in areas **without hydropower potential**.
- **Experience with hybrid** (solar PV / diesel generator) mini-grids **is limited** and these systems are faced with local operation and maintenance challenges;
- **Limited productive use of electricity from mini-grids**, resulting in community preference for more versatile grid connection.
- **High initial investment costs** (lack of debt and equity funding)
- **Facility management issues**, including lack of revenue to cover for operation and maintenance.

6. Discussion of TWG 4 Policy Recommendations

VEPG TWG 4
Access to Energy

P. 3

Mini-grids in remote areas

Recommendations for further action and/or further support needs in the topic area

- Draw **lessons from international experience** with mini-grids (e.g. India).
- The two **pilot projects** in Cao Bang Province and Bach Long Vy Island should be **closely monitored** in order to draw lessons for replication.
- **Off-grid projects** identified in the targeted programme on electricity supply to rural, mountainous and island areas (**Decision 2081**) **should be prioritized**. Feasibility studies should be conducted and state budget allocated for implementation.
- Combined with **vocational training of rural workers**, **training courses** should be organised for **local people** to expand their knowledge and provide basic skills for installation, operation and maintenance of renewable energy systems. This will also **create more employment** opportunities for the local labour force.

6. Discussion of TWG 4 Policy Recommendations

VEPG TWG 4
Access to Energy

P. 3

Biomass and biogas (for cooking)

Current status / where we are in the process

Biogas digesters at household level have been promoted widely in Viet Nam, and in some cases the technology is **applied / spreading commercially**, i.e. without support from Government or development projects, but this has **not yet developed everywhere**.

Efficient cookstoves for the use of biomass including agricultural residues have also been promoted widely and some are being supplied commercially by small and medium enterprises, but these are also **not yet used universally**.

Larger scale application of biogas digesters and cookstoves would **improve cooking fuel availability** and **cooking convenience**, **reduce work pressures for women**, deliver a **better (in-door) environment**, provide **organic fertilizer** for gardens (in the case of biogas), and **reduce greenhouse gas emissions**. However, despite multiple advantages, the equipment is **not always optimally used**, and **uptake is still limited**.

The **barriers** to further uptake include **perceived costs** to low-income households and **technical aspects**.

6. Discussion of TWG 4 Policy Recommendations

VEPG TWG 4
Access to Energy

P. 3

Biomass and biogas (for cooking)

Key challenges

- **Administrative procedures related to Public-Private Partnerships (PPP):**
 - Legal hurdles for public financing of private entities
 - PPP law in the making for many years, no conclusion
 - Bureaucracy demands meticulous planning, no flexibility
- **Harmonization:**
 - Biogas programmes of SNV, WB and ADB have different subsidy levels
 - Geographical overlap
- **Enterprise capabilities:**
 - Participating enterprises require dedicated training
 - Not all participating enterprises take advantage
- **Quality control**
 - Verification is critically important and needs dedication
 - Remote areas more costly and demanding

6. Discussion of TWG 4 Policy Recommendations

VEPG TWG 4
Access to Energy

P. 4

Biomass and biogas (for cooking)

Recommendations for further action and/or further support needs in the topic area

- A **nationwide biogas sector approach** should be promoted. A **national programme** where **financial resources** would be merged would ensure a common approach, goal and strategy.
- Establish **one harmonization and coordination mechanism** to oversee all biogas initiatives. Such mechanism would contribute to get a comprehensive vision of biogas development in Viet Nam and assess remaining market opportunities.
- **Access to the Green Climate Fund (GCF)** and **other public climate funds** to ignite markets and de-risk investments should be facilitated and promoted.

6. Discussion of TWG 4 Policy Recommendations

VEPG TWG 4
Access to Energy

Discussion on Policy Recommendations

7. Conclusion of the Meeting - Update on Timeline

VEPG TWG 4
Access to Energy

1st TWG meeting 4 April 2018

- Discussion of key challenges for the Access to Energy sector
- Discussion and agreement on priority topics
- Agreement on work plan and tasks

2nd TWG meeting 26 September 2018

Topics:

- Update on Rural Electrification Programme
- Update on EVN activities
- Focus on Biogas for rural areas
- **Policy recommendations to HLM**



Steering Committee meeting
Tentative date:
5 October 2018



2nd High-Level meeting
Tentative date:
6-8 November 2018

3rd TWG meeting Tentative date: tbd (Dec 2018/Mar 2019?)

Proposed topics:

- tbd
- (...)



3rd High-Level meeting
Tentative date:
(Jun/Oct 2019?)



*Thank you for your attention
and participation!*



EVN

TẬP ĐOÀN ĐIỆN LỰC VIỆT NAM

ELECTRIFICATION FOR MOUTAINOUS AND ISLAND AREAS 1995-2016

VIETNAM'S ELECTRIFICATION TARGETS



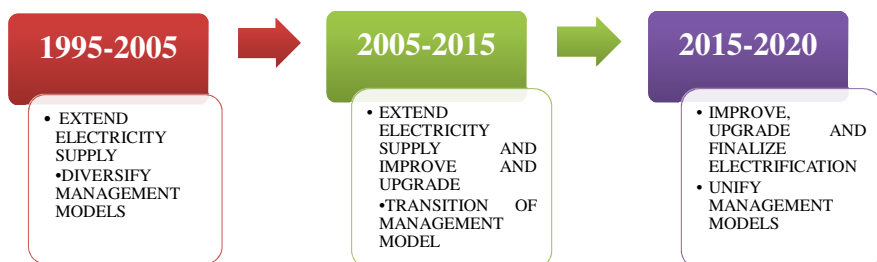
ELECTRICITY
MUST BE ONE
STEP AHEAD

ADEQUATE
POWER
SUPPLY FOR
NATIONAL
DEVELOPMENT

100%
HOUSEHOLD
ELECTRIFICAT
ION IN 2020

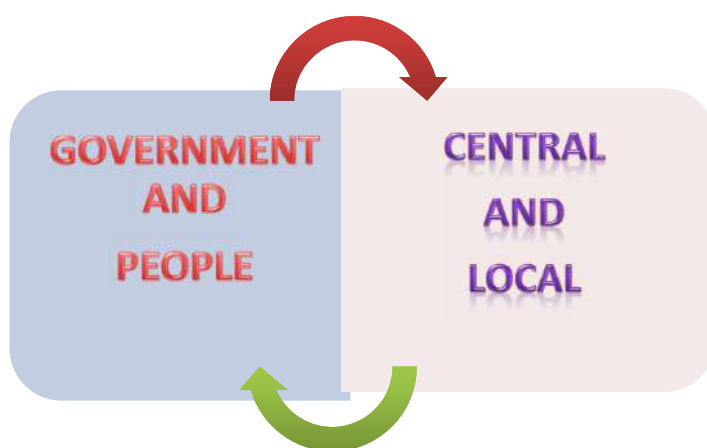
VIETNAM ELECTRICITY

STAGES OF RURAL ELECTRIFICATION

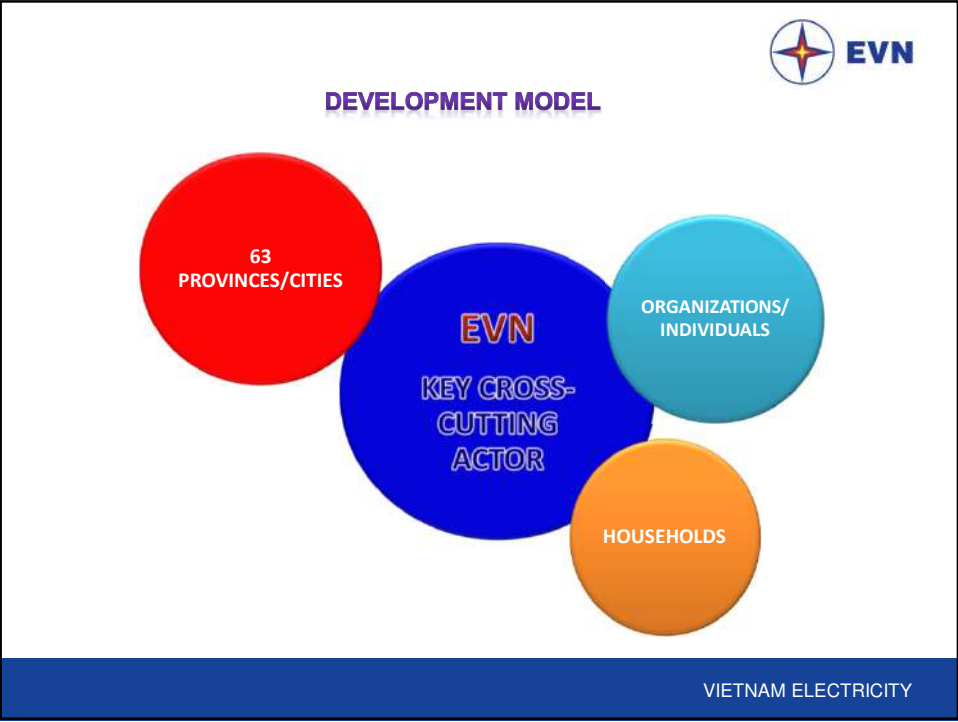
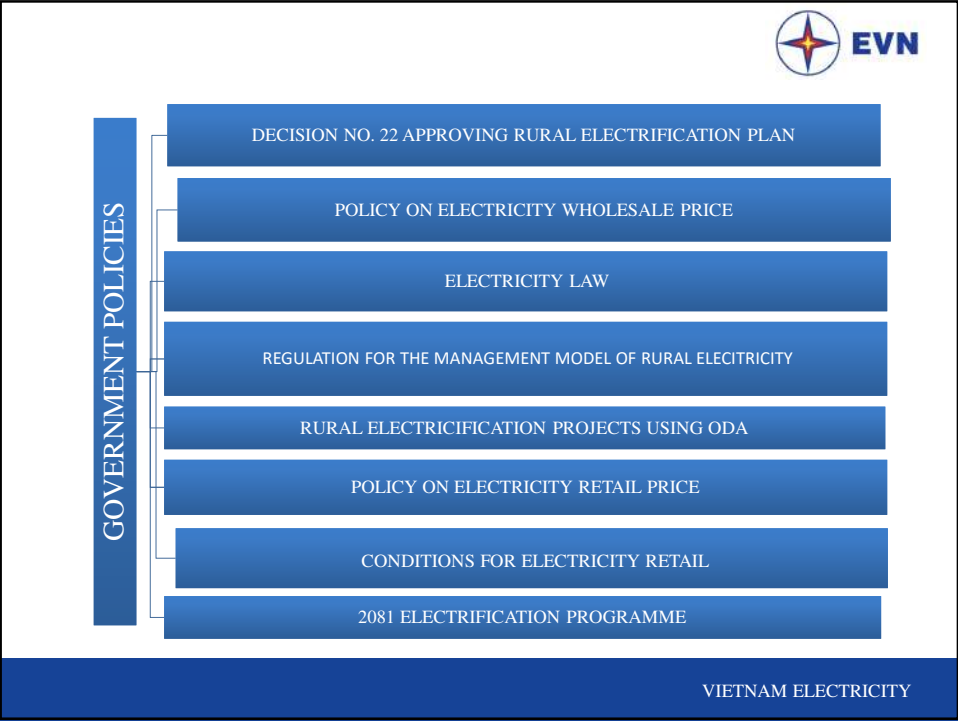


VIETNAM ELECTRICITY

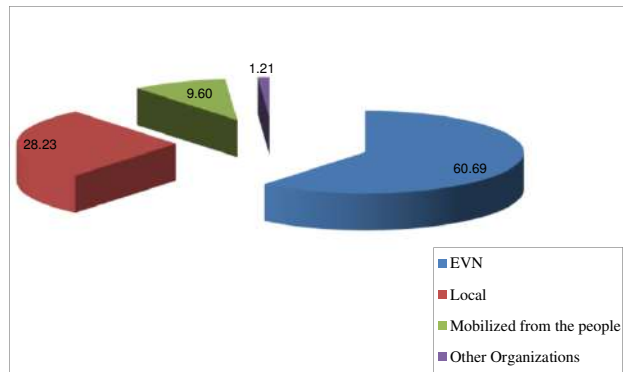
RURAL ELECTRICITY DEVELOPMENT GUIDELINES



VIETNAM ELECTRICITY

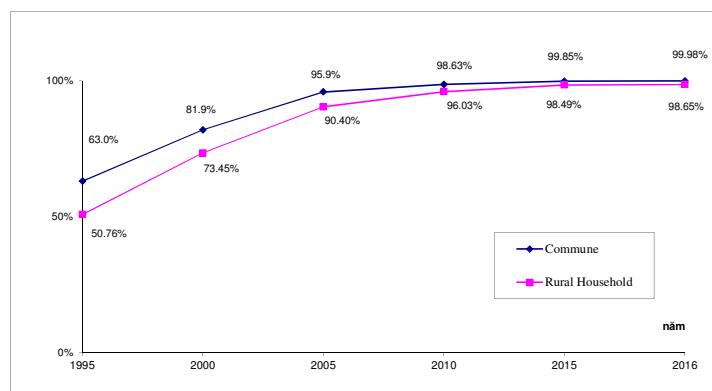


ELECTRIFICATION FINANCING STRUCTURE

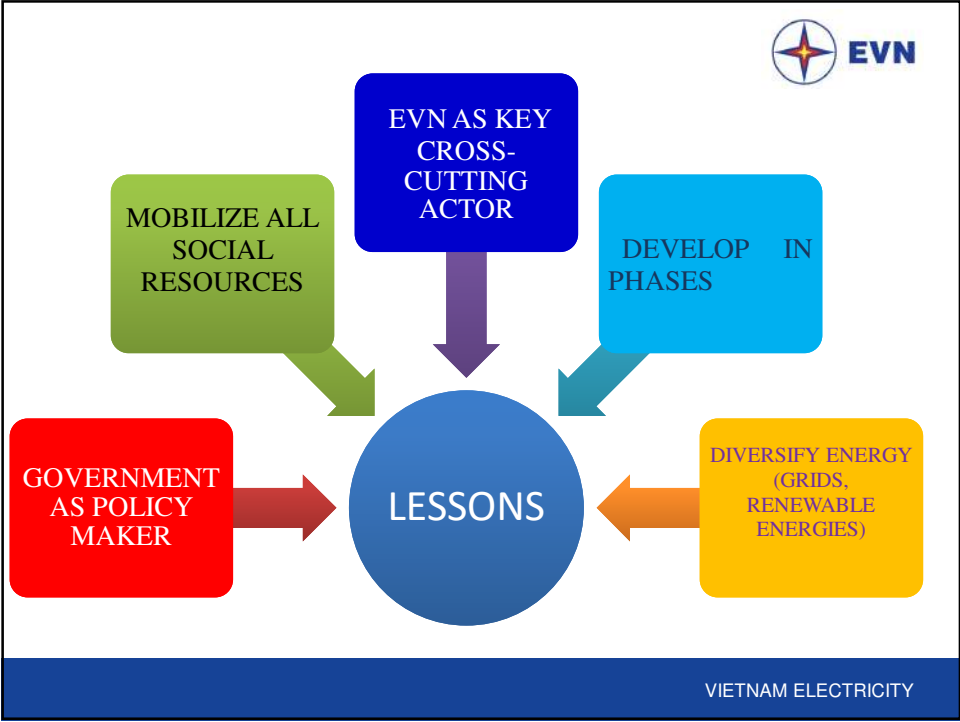
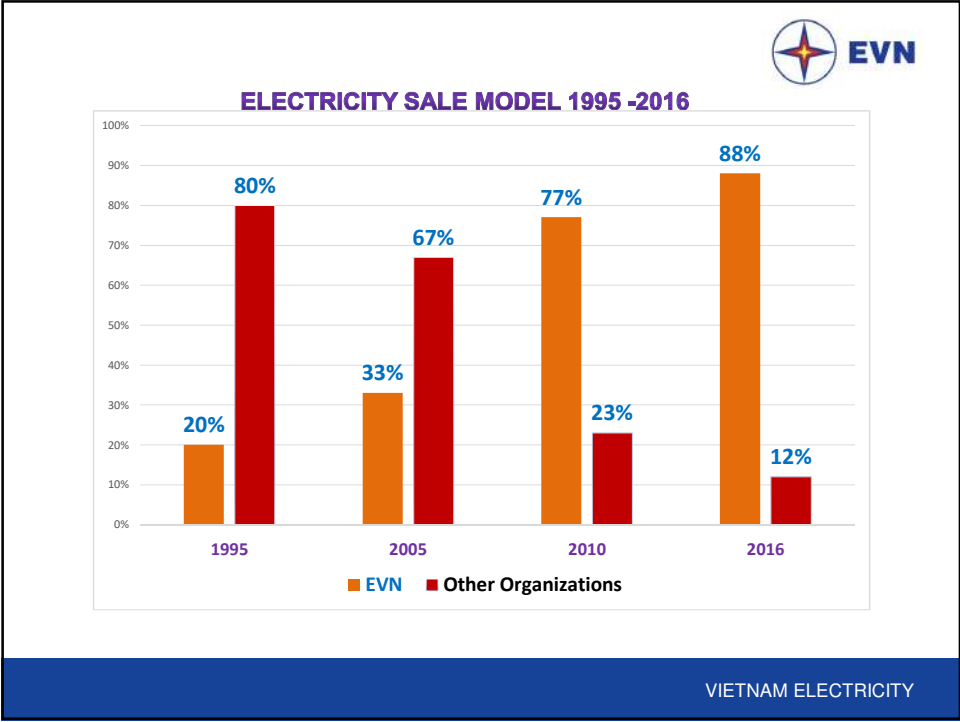


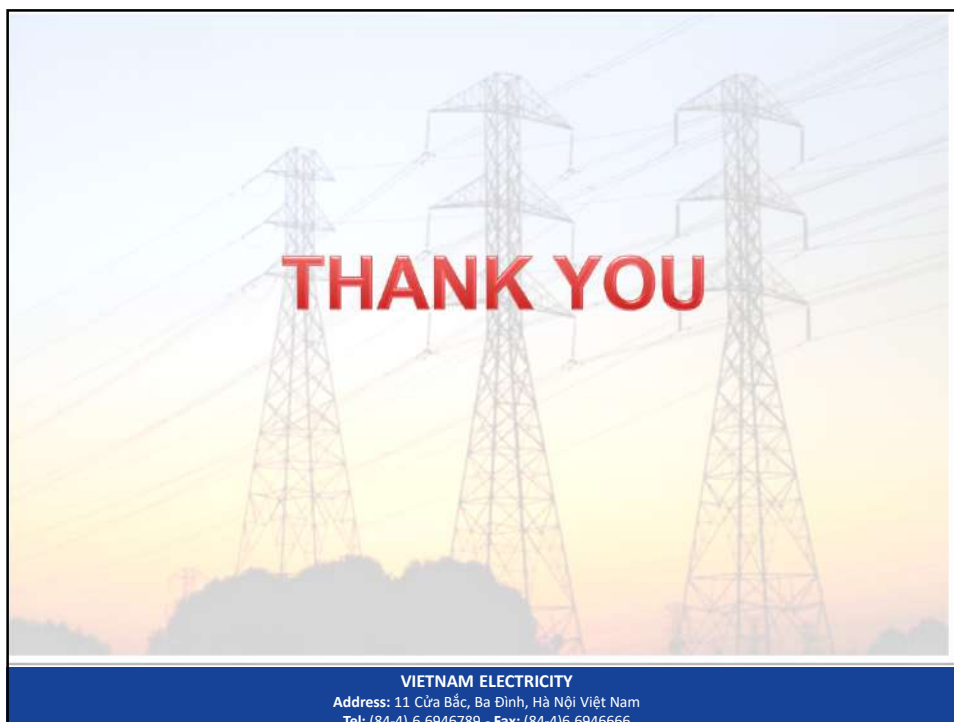
TẬP ĐOÀN ĐIỆN LỰC VIỆT NAM

ELECTRICITY SUPPLY MAP 1995- 2016



VIETNAM ELECTRICITY





VIETNAM ELECTRICITY

Address: 11 Cửa Bắc, Ba Đình, Hà Nội Việt Nam
Tel: (84-4) 6.6946789 - **Fax:** (84-4)6.6946666



Up-Scaling Biogas Markets Vietnam

Bastiaan Teune: SNV sector leader

TWG

Hanoi, 26 September 2018



Decentralised Renewable Energy Solutions

800.000

Biogas
digesters
4m
people

28

billion ton
CO₂-eq
reduced

370,000

Cookstoves
1.85m
people

285,000

Solar
systems
1,4m
people

Accelerating
Energy Markets

25+

Countries

25

mini-grids
10,000
people

SNV's Sustainable Energy Markets Approach

Stimulate demand, change behaviours, improve supply, improve access to finance, quality assurance, enabling environment for business, smart incentives

Contents

- Relevance Domestic Biodigesters
- RBF Tool in Public Private Partnership
- Recommendations
- Technical innovation

3

SNV



SMART DEVELOPMENT WORKS

Energy for Cooking

- 50% HH use biomass
- 30% national energy consumption
- 3 tCO₂e/year/HH
- 45,000 death/year from smoke in Vietnam
- Highly Gender and Aged Biased
- 2-4 million livestock holders

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4

SNV



SMART DEVELOPMENT WORKS

<https://youtu.be/My7AMb-0EsM>



SNV

SMART DEVELOPMENT WORKS

5

<https://youtu.be/9PKPz8ImV94>



Footer

SNV

SMART DEVELOPMENT WORKS

6

Economy of a Biodigester

- Investment 350 Euro (70 Euro labour)
- Fuel savings: 85 Euro/year
- Additional agricultural yield (up to 1,000 Euro/year)
- Time savings cooking 1 h/d, cleaning 30min/d
- 6tCO₂e-eq/digester/year (fuel and methane):
- 2.2 mln (!) credits issued Gold Standard
- HAP exposure to LPG levels, ADALY: 0.22/digester/10 years

SNV



SMARTDEVELOPMENTWORKS

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Relevant Policies

- Vietnam National Climate Change Strategy
- Vietnam Green Growth Strategy
- National Strategy on Environment Protection
- National Determined Contributions: 500,000 digesters
- Decree No 50/2014/QDD-TTg: Supporting Policy on enhancing the household farming activities (5 Mln VND Subsidy)

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SNV



SMARTDEVELOPMENTWORKS

8

Brick biodigester



SNV

SMART DEVELOPMENT WORKS

9

Fiber reinforced composite



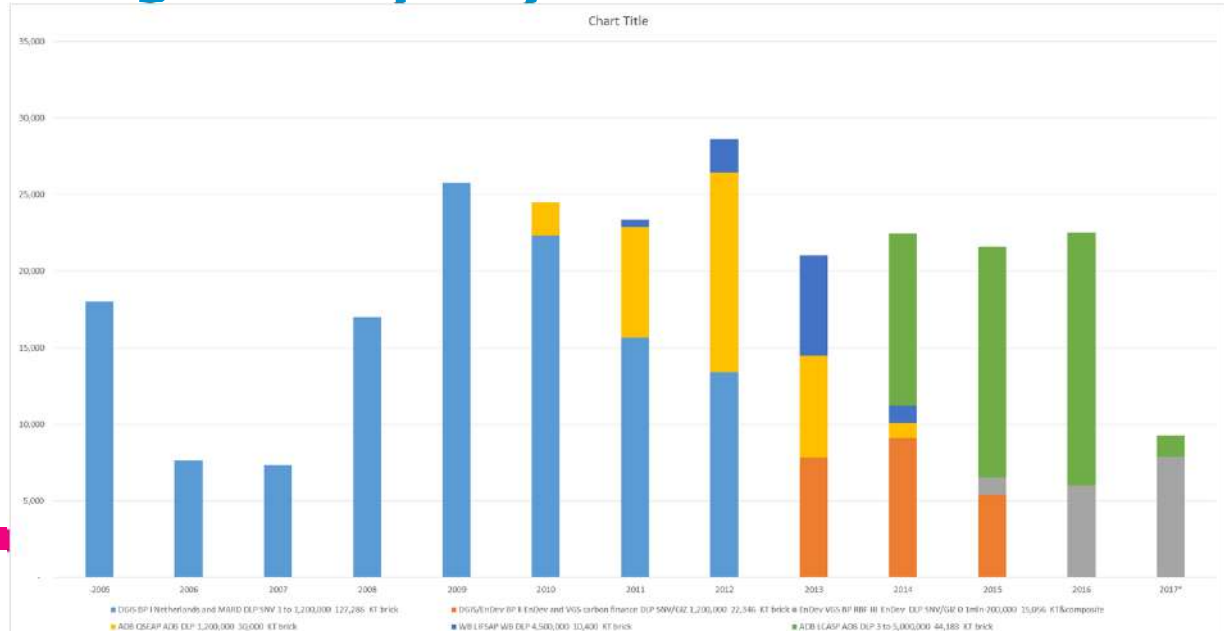
SNV



SMART DEVELOPMENT WORKS

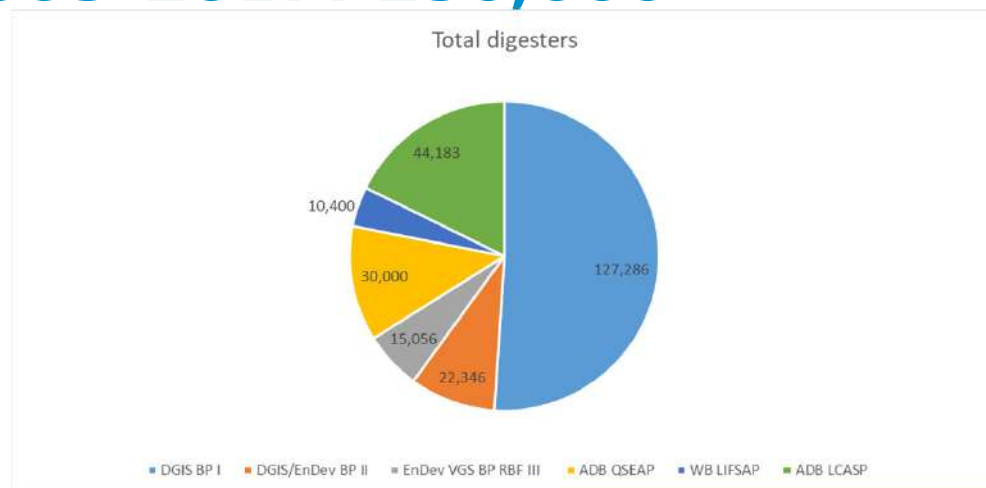
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Digesters per year under MARD



11

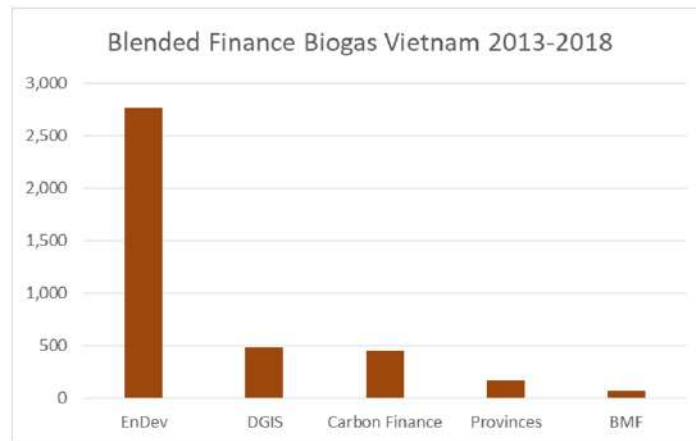
2003-2017: 250,000



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Blended finance BP

Total 4 mln Euro (in 1,000 Euro's)



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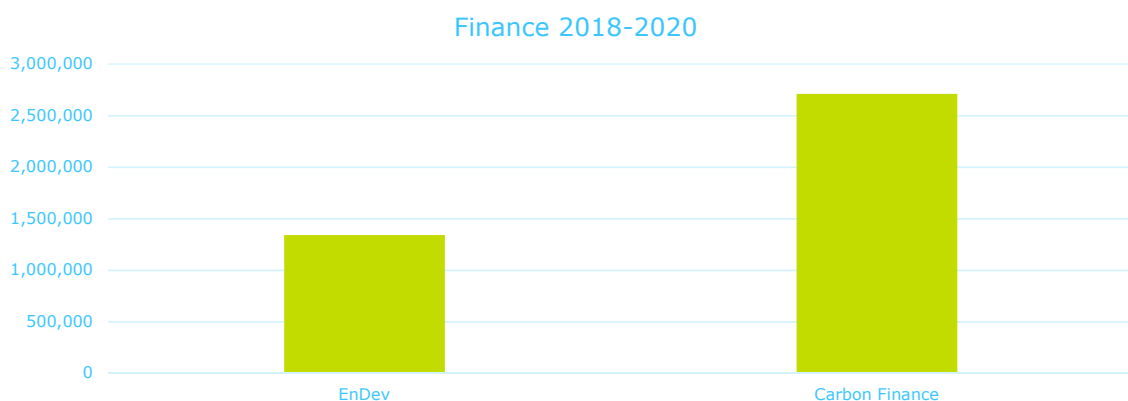
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SNV



SMART DEVELOPMENT WORKS

Blended Finance 2018-2020 (Euro)



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SNV

SMART DEVELOPMENT WORKS

Results Based Finance

- De-risks public investments
- Clear rules and regulations
- Transparent
- Cost efficient
- Supports sustainable market development
- Empowers

Footer

SNV



energising
development

SMART DEVELOPMENT WORKS

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Before and After

	Provincial bodies	govt.	Enterprises	Households
Tasks	<ul style="list-style-type: none"> • Promotion • Awareness • Client identification • Household training • Extension • After sales service • Quality control 		Construction on demand of Govt extension workers.	
Finance	Receive subsidy of appr. Euro 35 per digester from ODA for services provided		Receive payment from household	<ul style="list-style-type: none"> • Pay for materials • Pay for mason services • Receive subsidy of appr. Euro 40 for their digester from ODA

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SMART DEVELOPMENT WORKS

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Before and After

	Provincial govts.	Enterprises	Households
Tasks	<ul style="list-style-type: none"> Promotion Awareness Client identification Household training Extension After sales service Quality control 	Construction on demand of Govt extension workers.	
Finance	Receive subsidy of app. Euro 35 per digester from ODA for services provided	Receive payment from household	<ul style="list-style-type: none"> Pay for materials Pay for mason services Receive subsidy of app. Euro 40 for their digester from ODA

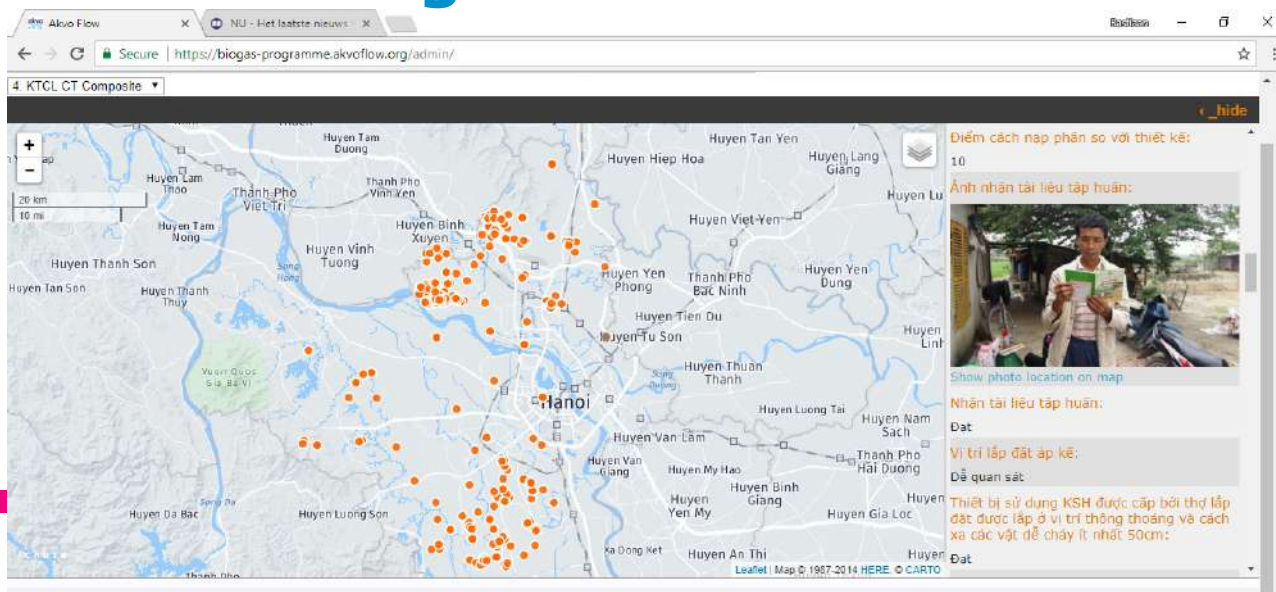
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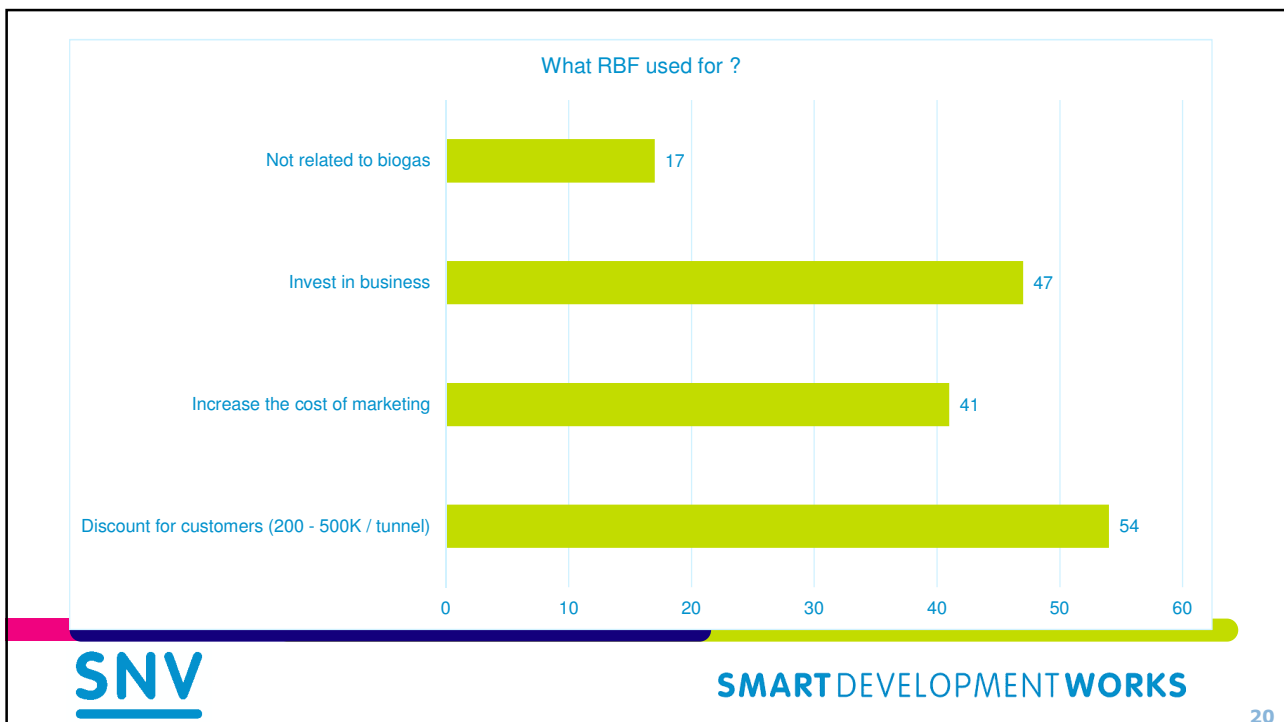
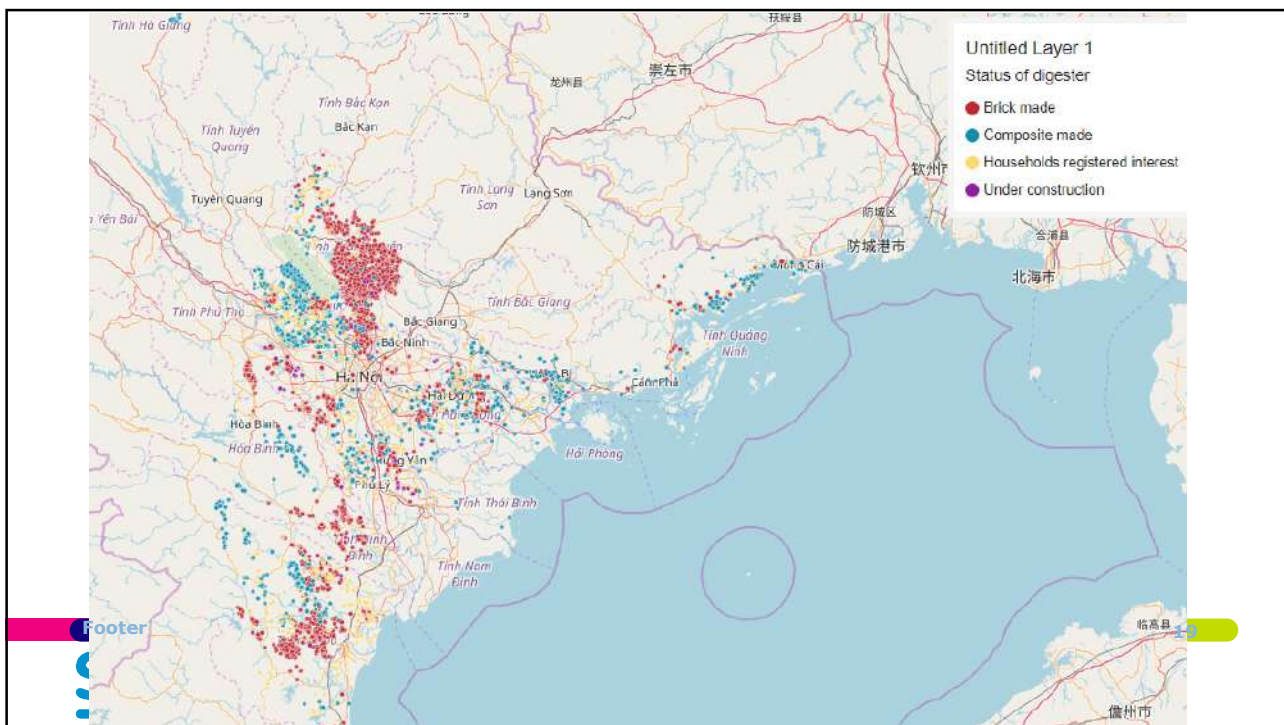


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WORKS

Monitoring





Advantages RBF

- Impact beyond intervention
- Cost effective: 110->70 Euro/digester
- Transparent
- Relative easy to implement
- Differentiation possible

Footer

SNV

SMART DEVELOPMENT WORKS

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Challenges

- Administrative and legalities (PPP)
- Harmonization
- Quality control remote areas
- Subsidy harmonization

SNV

SMART DEVELOPMENT WORKS

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Policy Opportunities

- National Wide Sector Approach
- Harmonization and coordination
- Multi Stakeholder Platforms
- Biogas GCF and NAMA; Leverage SB and VGS
- Introduce RBF: Smart Incentives

SNV

SMART DEVELOPMENT WORKS

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Thank you very much



SNV

SMART DEVELOPMENT WORKS

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