U.S. Department of Commerce
Renewable Energy and Energy Efficiency Advisory Committee

Charter 6, 2020-2022 ● Recommendation Fact Sheet

Recommendation #6 (Approved: December 9, 2021) on identifying and implementing best practices for a "just transition" to clean energy to ensure "energy equity" in developing countries.

We recommend that the Secretary direct the U.S. Commercial Service to identify and implement best practices for catalyzing investment and sale of REEE products and services in developing countries, to assist the Build Back Better World initiative in developing countries, and to collaborate with EXIM Bank and DFC to create a loan fund for smaller REEE projects (e.g. 0.5-$10Million each project) that could be competitive with other country export assistance programs, notably China, BIC (Germany) and Israeli export programs, among others. Because of projects going into developing countries, there are issues with securitizing funding, lack of creditworthiness of host, and the small size compared to Western energy projects in general.

Financing gaps that these new programs could bridge include:

1. Establish a Loan Fund for REEE projects that support individual project values of $0.5 – $10 million for emerging markets (countries without a well-developed commercial code, and problematic legal system such as seen in a large number of African countries), to foster the development of energy efficiency, distributed on or off-grid renewables solutions as well as commercial and industrial (C&I) renewable energy opportunities in those markets; these are normally not supported in international financing circles such as the World Bank, DFC, African development Bank, Asian Development Bank, etc. After such a fund is operational, it may be useful to further enhance such programs by fostering close relationships with NGOs such as The Rockefeller Foundation, Ford Foundation and other NGOs already operating in a given country, wherein they might contribute support funds and resources to expand such a program.

2. Establish an advisory and capacity building entity within the Department of Commerce's U.S Commercial Service to foster local relationships with industry both in the USA and overseas in developing market countries. An in depth understanding of the market from a local level and strong relationships with local players will encourage partnerships with U.S firms and local businesses and assist to quickly facilitate such REEE projects abroad in developing countries. After establishing a program, there could later be collaboration with USAID, World Bank Advisory Services and others who are quite active on this front, to further enhance such a financing capacity.

Sub-Committee(s): Global Decarbonization

Background Information:

Energy Equity & Environmental Justice Impact

1. This provides access to clean power to frontier and emerging economies and levels the playing ground significantly as it relates to implementation of such projects.
2. This also creates local opportunities for participation and a just transition into the clean energy economy through human capital developments as economics and number of projects expand.
3. This allows small and medium U.S enterprises to be able to compete with other global partners in these emerging markets because they are able to move stalled projects forward.
4. This will create more integrated local relationships for U.S small and medium sized firms to collaborate with local partners for business continuity and expansion.

Emerging markets generally do not have the level of development of market and regulatory institutions and enabling environment as found among developed nations. Investors' risk in emerging market economies can include political instability, domestic infrastructure problems, currency and political volatility, corruption, and illiquid equity, as many large companies may still be "state-run" or private**.** The transition to renewable energy in Africa has been progressing impressively over the last decade, with many countries working to increase renewable energy capacity in recent years. Several African countries have energy efficiency and renewable energy markets including utility scale, commercial and industrial(C&I) and rural electrification, as well as off-grid opportunities, distributed energy resources (DER), and virtual power plants.

This would be a program whose goal is to promote make small projects financeable, on the order of $0.5-10 million USD total cost, which encompasses many of the developing world needs at this time. What has been missing on the world stage is a program which combines the total loan funds to be able to develop, design and implement turnkey energy generation and savings projects in appropriate locations in frontier markets, such as areas in Africa, Southeast Asia, Latin America among others; where the benefits of implementing such a project are great, but the size of most single project are small, and normally not of interest by the international finance community.

Also, there is the problem of securing equity and debt for many of these projects, and what is needed is a means for providing a single financing facility, in the form of a debt and/or debt/equity participation, so as to enable such smaller projects to be able to be implemented in a timely manner. This follows the success of energy efficiency-only

projects wherein the standard now is to receive 100% loan of all costs, including any up-front finance charges, development, engineering, management, construction, metering, and measurement and verification and billing. The critical value in these situations it that the developer/ESCO has to provide guarantees of performance and even provide corporate guarantees (and in some cases personal guarantees) of the overall loans for 100% of the project value. In the past, financing small projects in Africa and other emerging countries has been very difficult due to the risk of non-payment by the end user, or problems enforcing legal contracts not only on payments, but timely payments. Also, for the smaller project size contemplated, it is important that a single source of total financing be available, wherein the debt and equity is all rolled into a single source fund. The equity part may be part of a US agency requiring certain loan guarantees from the ESCO or RE developer. There are simply no such funds from the DFC or World Bank at this time, and hence a gap in the marketplace worldwide, yet a consuming need for both new renewable energy, and energy efficiency resources to improve the energy posture of the government and industrial facilities in emerging markets.

For renewable energy for instance, in frontier markets like Africa, it is not a case of the end users not paying, for in many cases the offtaker (purchaser of new carbon free electricity) could be a local utility with limited transmission and distribution lines, but that has an existing system for billing and collecting utility charges, and a company asset base that is known for paying the bills in a timely manner. Some public sector agencies in emerging markets have a poor track record of paying for RE in a timely manner, and may not even be credit worthy even for local banks. Or it could be a manufacturing plant implementing energy efficiency measures. In many cases, there is already a potentially financially viable "offtaker" (the Host). This together with other built-in structures unique to the energy efficiency and renewable energy business models will, to a large extent, "de-risk" the investment. Having the Department of Commerce develop a funding mechanism, which might include local bank guarantees, may be a partial solution. Such guarantees may be not on the total fund, but on timely payments, so the risk might be structured only for the portion interest associated with late payments, or similar.

Other programs proposed for the Dept of Commerce and promoting exports are properly focused on larger projects, and are structured for obtaining the equity portion and the debt portion of funds separately for developers/suppliers seeking to obtain funds, but such programs simply are too cumbersome to allow implementation of scores of smaller, but yet financially beneficial, energy projects which promote greenhouse gas reduction and promote energy equity in a given emerging market.

What is needed to promote trade in this arena is a funding mechanism, not grants but legitimate loans, which can provide the funds needed to completely develop many smaller EE and RE projects. This is especially true for ESCOs (energy service companies), who by

themselves almost always do not have a large balance sheet. ESCOs, by design, tend to be entrepreneurial, smaller businesses, growing out of either energy efficiency experience, or smaller mechanical or electrical contractors who have chosen to expand their business offerings using their intellectual property, not assets, as the basis (in fact it is the intellectual property that is the major asset). In developing a funding program, that such market development should involve the government itself as a customer, information provider, and policy maker is necessary to promote ESCOs. It may be possible for DFC to organize and co-fund creation of ESCOs themselves in many emerging countries, but require these new, budding ESCOs to be required to partner with established US ESCOs to insure successful project implementation.

In the US and other western countries an entire finance industry has evolved to support these ESCO projects, on the basis that the project economics, not the profits of the firm itself, are the asset utilized to effect loans made. Additionally, in a large number of those cases 100% of all funds for the projects, including overhead and profit of the ESCO, are financed from a single entity, without regard to equity or debt ratios per se of the firm, but instead are replaced with looking at reliable cash flows versus debt payments (i.e. the project economics).

When one has a series of small projects, a simple evaluation and approval is needed in order to be cost effective, and for an ESCO or similar group to go and obtain equity funds, then try and get loan funds for the same project is not a repeatable solution since too much time is involved for each small project, but collectively they could represent a "package" of $25-100 million USD.

The US has spawned wide development of ESCOs and similar organizations whose economic value is the intellectual property they possess for successfully developing and implementing such EE and RE projects repeatedly, and the level of drive and ambition demonstrated by the firms, regardless of their size. Firm sizes vary from 10 persons to 100s, and in the extreme cases of large corporate entities, 10,000 or more (like JCI, Honeywell, Siemens, etc., i.e. huge multinationals). As a reference point, the worldwide ESCO market is now running around $32 billion USD per year, with half of that in China alone (https://www.iea.org/reports/energy-service-companies-escos-2); and this generally excludes most RE efforts which are billions a year more.

One important area of the world now seeing more focus is that of frontier markets and other emerging markets, as compared to the USA, EU, Canada and similar compared to the past. These markets generally are composed of many smaller countries, most of whom are developing countries without a well-developed commercial legal structure, without full infrastructure, and all in need of technology help. What these countries and their

businesses lack is a shortage of serious sized investment capital. With the expansion in the US of renewable energy and energy efficiency firms, there is no shortage of US firms and expertise, and some of these organizations have focused on Africa and Asia as an area of possible expansion, wherein their expertise can be immediately utilized in some of these countries.

One way to expand use of such a fund overseas, especially for African countries, is that the end users are often local businesses, and their currency is based on local currency, not USD. What is needed is an ability to structure the financing, with help of the US Government, so that the loans for those foreign projects are repaid by locals in local currency, and any future divergence of local currency and US inflation rates are ignored, the differences if negative being charged off through say USAID to "foreign aid" via government guarantees on the amount of funds shortfall strictly due to currency shift and not due to performance failures. In this way, the US Government would allow private financing mechanisms to be structured, but the currency risk shift being taken by the US Government, but the underlying loan and project viability still lying with the financing group. The US Government would be a form of guarantor, not of the loan itself, but only the currency risk issue caused due to structuring the contracts for payment in local currency only. Because of the currency risk provision, of course the US Government would have a veto power on guaranteeing the exchange rate issue. Alternatively, the US Government could help de-risk the foreign exchange issues. Certainly getting the country Government to participate in the de-risk would aid in expansion of the RE and EE efforts in that country.

An important element of this would be to *not* allow the process to be tied up with the usual federal government constraints, since an important element of most RE and EE financing in the past here in the US is that the review and approval times are quite short, even for projects in the 50-100 million USD range, simply because the economic evaluation is more an engineering assessment, and the Host credibility evaluation is usually fairly straightforward.

Expected Effect on U.S. Export Competitiveness:

Successful implementation of such a "clean energy" loan program could allow:

(1) Dramatic increase in the amount of investment from US based firms in infrastructure generally for RE and EE work; these are generally more capital intensive efforts, but require the generation to be in place, or ready to be built, in order to justify the transmission and distribution efforts, hence "the chicken or the egg" syndrome.

(2) Promotion of transformative and sustainable infrastructure across a country through cost-effective expansion of US firms able to work in the US and outside the

US. A key element necessary for successful exporting of equipment and expertise to developing countries is that the firm first be a financially viable entity with strong US presence normally, so anything that promotes similar activities in the US can be an important catalyst for other work overseas. Enhanced US industrial leadership in sustainable technologies by encouraging an increasingly significant domestic project work base (transportable around the world), for without a strong US presence, it is not likely that much international work could be accomplished by an American firm.

(3) Creation of a healthy financial market among US-based investment plans and qualified international plans which will then have an incentive for streamlining and improving sustainable US-based infrastructure projects over time, whose elements are then able to be transported to developing countries in a cost-effective manner.

(4) Solving some of the problems with normal international financing which previously had to be repaid in hard US dollars or euros, which might be decoupled with respect to local currency conditions in a given country.

(5) Successful implementation could be keeping transaction costs down, even for smaller projects, since these would be structured in some sense as "the car lease" concept so as to keep the review and approval process simple. This proposal would be coordinated between the US Departments of Commerce and others such as USAID and USTDA, DFC and the World Bank/IFC.

Specific Agencies Responsible for Implementation:
U.S. Department of Commerce, EXIM Bank, DFC, USAID, USTDA, Dept of Treasury (Ref: World Bank)

Measures of Success:

1. Number of small to medium sized RE and EE transactions actually completed in developing countries (with size in the range of $0.5 to $10 million each) increase as compared to in previous years.

2. Number of small to medium sized REEE companies that will be assisted by the U.S. Commercial Service in developing countries that have successfully been awarded contracts and obtained financing from EXIM Bank and DFC, as well as other U.S. agencies.