

May 8, 2012

Comments from Germany on the Investment Plan for Chile

Summary

We generally welcome the Chilean Investment Plan (IP). The IP outlines systematically why the following areas for intervention have been selected: (I) Concentrated Solar Power project (CSPP); (II) Large Scale Photo Voltaic Project (LSPVP) and (III) Renewable Energy Self-Supply and Energy Efficiency (RESSEE).

By supporting the implementation of the first large scale solar power projects in Chile, the CTF will significantly support the transformation of the Chilean energy matrix towards renewable energy sources. The energy efficiency sector in Chile also requires substantial support to unlock its potential. Therefore we believe that the planned components of the Chilean CTF investment plans could achieve significant greenhouse gas (GHG) emission reductions, not only through the direct financing of the CTF pilot projects, but through creating an enabling environment for scaling-up effects.

We therefore fully support the approval of the investment plan. However, we suggest to consider the following recommendations in the project phase.

The project proposals based on this investment plan should consider:

- Knowledge Management: creation, collection and dissemination of project related knowledge will be key to reach a transformational impact;
- The involvement of the local financial sector will be key for a sustainable scaling-up of solar energy, renewable energy self-supply and energy efficiency projects in Chile
- The German development bank KfW has an existing financing program with the Chilean development bank CORFO, which also focuses on the financing of energy efficiency and renewable energy through local financial institutions. We recommend that the planned CTF programs are being coordinated with these ongoing efforts.

Comments on rational for selecting the project components (section 5)

a. CTF Intervention in the solar sector

The CTF Investment Plan has rightly identified the great potential of solar energy in Chile, in particular in the Northern region. The private sector is showing a great interest in entering this market. As of now private sector solar projects with a capacity of 467 MW have been approved and an additional 302 MW are in the approval phase. However, only 1 MW is currently in the construction phase.

The IP identifies as a main barrier the lack of adequately structured financing mechanisms.

According to the IP, the CTF interventions could contribute to financing initial plants/large-scale demonstration actions, via financing and technical assistance.

Additional points to be considered:

The financing of initial large scale demonstration projects will be crucial for proofing the viability of solar energy in the Chilean market. However, the further development and scaling-up of the solar sector in Chile will need further assistance:

1. The local financial institutions are key for the provision of sustainable financing sources for scaling-up the solar sector in Chile. Therefore we recommend a strong focus on the knowledge creation, collection and deployment of the first pilot projects that will be financed within the framework of this IP.
2. For the successful scaling-up of the solar energy sector in Chile (especially for PV) the access to an efficient and stable grid connection will be crucial. Currently the grids in Chile are not very stable, which has caused frequent black-outs in the past.
3. KfW Development Bank has significant experience in the successful implementation of solar projects (photovoltaic and concentrated solar power) world-wide. The Gesellschaft für Internationale Zusammenarbeit (GIZ) has been active in Chile as a technical advisor in the area of renewable energy, with a focus on solar energy. We therefore recommend a close cooperation with KfW and GIZ.

b. CTF Intervention in the Renewable Energy Self-Supply and Energy Efficiency

The IP has rightly identified the importance, cost-effectiveness and potential of energy efficiency investments in Chile. We fully agree with the rationale why this sector should be supported.

However, we also would like to emphasize the need to set clear targets for energy savings on a national level, which then need to be broken down into concrete programs. Without clear incentives for energy efficiency measures or requirements for energy saving targets the sector will not be able to realize its potential.

Chile as a country has not yet established any legally binding energy saving targets. The political goal is to save 12% by 2020.

Comments on enabling policy and regulatory environment (Section 6)

Chile has done a lot in recent years with regards to the creation of an enabling regulatory environment, especially in the field of renewable energy. For instance, based on a law from 2008 it is mandatory for power companies to incorporate 5% of Non Conventional Renewable Energy (NCRE) into their electricity sales.

Chile has set up an energy ministry that also has specialized renewable energy and energy efficiency departments. The Chilean Renewable Energy Center (CER) as well as the Chilean Energy Efficiency Agency (AChEE) have been set up by the government to foster the respective sectors.

This year (2012) Chile has developed a National Energy Strategy (ENE) which has identified the major challenges of the energy sector as well as concrete action plans for 2012-2020.

The challenges Chile is facing are significant, for instance with regards to energy security, and the action plans are ambitious. However, Chile has a proven track record and we believe in a successful implementation of the National Energy Strategy.

Comments on the Project components (ANNEX I-IV)

Component/ Annex I: Concentrated Solar Power project (CSPP)

Cost/Financing Investment cost: 486 about million US\$
100 million US\$ CTF resources

Background:

The second largest power grid system in Chile, SING, consists of almost 100% fossil fuels, and supplies 90% of its electricity to large industries, mainly to the mining sector, the main driver of the Chilean economy (19% of the GDP). Meanwhile, the northern region of Chile has the highest irradiation rate worldwide, and is also where most of growth on demand for electricity will occur, due to the expected new investments in mining operations.

The IP argues that large-scale solar projects have the potential to reduce the fossil fuel energy dependence of the SING, decoupling economic growth from GHG emissions. Furthermore the IP argues, that utilizing CSP plant with energy storage would allow for a flatter generation profile (in comparison to PV) and therefore fit better the energy demand of the mining industry, which consumes most of the energy in the SING grid.

Comment:

We agree with this line of argumentation that from a technology point of view CSP energy would be the most efficient and compatible renewable energy source in the SING grid. If the CSP technology would reach market competitiveness in the SING grid, this RE source could contribute to a significant GHG emission without jeopardizing the economic growth.

However, as the IP also rightly points out, capital cost of a solar CSP plant is still high and makes any potential solar CSP project economically unviable.

We would like to add here, that in the Chilean context a potential CSP plant with estimated generation costs of 15-23 \$ct/kWh (depending on the expected IRR, financing costs etc.) would need to compete with energy generated from coal at cost of 6-7 \$ct/ kWh. The IP expects the planned CSP pilot project to be bankable as it will receive concessional financing from CTF resources as well as a grant from the GoC. However, additional concessional financing might be necessary to reduce the gap between the estimated CSP production cost and the actual generation cost from coal fired plants.

Furthermore, we would like to understand better, how additional CSP projects could reach economic viability without significant concessional financing sources (e.g. a carbon tax could lead to a higher competitiveness of CSP projects).

Furthermore we would like to understand better, how the lessons learnt from this pilot project will be systematically collected and disseminated. (Knowledge creation and management)

Also, we would like to understand better whether the proposed timetable with an anticipated disbursement for June 2013 is realistic.

Component/ Annex II: Large Scale Photo Voltaic Project (LSPVP)

Cost/Financing Investment cost: about 300,6 million US\$
50 million US\$ CTF resources

Background:

In the case of Chile, high solar radiation coupled with very high energy prices present a favourable context for the implementation of solar technologies. PV generation in Chile could displace diesel or coal generation. Despite this potential there is a lack of financing for these projects and only two exist (and are still in construction) so far in the country. Solar power has not yet gained acceptance in the market as a reliable and practical power generation alternative. For solar financing, there is a high perception of risk and lack of technological familiarity amongst LFIs, leading to a lack of domestic debt for large PV projects, and high interest rates where available.

The IP argues the following: By providing CTF and MDB financing, and taking into account the expected cost reduction in the technology, it is expected that in the medium term existing barriers will be sufficiently reduced in order to allow PV technology to reach financial sustainability and to achieve market transformation, while reduction in technology costs per MW of PV power enables closing the gap vis-à-vis grid parity.

Comment:

We agree with this line of argumentation that in particular a lack of financing is one of the main barriers for the development of a PV market in Chile. The reluctance of local financial institutions to finance PV projects in Chile is based on their lack of familiarity with this technology, but also on the missing experience with non-recourse financing (project finance) which is the common financing structure for renewable energy projects like large-scale PV projects.

A successful scaling-up of the PV sector in Chile would strongly depend on a local financial sector, that is ready to finance this kind of projects. Therefore we would very much welcome a project proposal that would invite local financial institutions in the financing of the pilot projects and share the lessons learnt with the entire Chilean financial sector (knowledge creation and management).

For the successful scaling-up of the solar energy sector in Chile, especially for PV, the access to an efficient and stable grid connection will be crucial. We would recommend to take this into consideration in the project phase.

Component/ Annex III: Renewable Energy Self-Supply and Energy Efficiency (RESSEE)

Cost/Financing

Investment cost: about 421,8 million US\$

49 million US\$ CTF resources; preparation grant 1 million US\$ CTF resources

Background:

At present, Chile has the most expensive electricity in South America. Chile's competitiveness and economic success is particularly threatened by having much higher electricity costs compared to other countries. The most cost-effective action to reduce GHG emissions in Chile is energy efficiency (EE). EE as well as renewable energy self-supply, namely generating their own power, would furthermore increase the competitiveness of the Chilean economy. Nevertheless RESSEE projects face various barriers including: (i) financial barriers resulting from a lack of knowledge and experience among financial institutions related to project-based financing for self-supply and EE projects; (ii) lack of information on potential technologies and use of alternative energy resources; and (iii) lack of experience among energy end-user clients and technical service providers on the potential technologies and energy business models.

Comment:

We agree with the suggested approach of the IP to fast-track the scale-up RESSEE projects through providing concessional finance and training to local financial institutions in order to incentivise them to finance eligible RESSEE projects. These will lead to a sustainable provision of financing in the long run.

The German development bank KfW has an existing Financing Program with the Chilean development bank CORFO, which also focuses on the financing of energy efficiency and renewable energy through local financial institutions. We recommend to cooperate and coordinate these efforts with the planned CTF programs.

Component/ Annex IV: Preparation Grant for RESSEE

Background:

The need for greater levels of energy efficiency (EE) in Chile is evident. Factors such as high energy prices faced by consumers, the growing public concern for the environment, reduction of domestic resources and national energy security contribute to a growing awareness of the need for greater EE. Empirical evidence has shown recently that EE is not implemented to its full potential due to the existence of certain barriers. These include barriers related to information available, economic barriers, technical barriers, institutional barriers and cultural barriers.

This grant support includes four activities: (1) Market Development, where concrete actions towards reducing the entry barriers for EE and energy self-supply production schemes must be assessed; (2) Capacity development, aimed to increase the knowledge and expertise of all the key actors of the market; (3) Project development, to develop a series of EE and energy self-supply production projects to the point of being fully prepared for funding ; and (4) funding of projects through a series of different governmental and private schemes.

Comment:

We agree with the necessity and goals of this preparation grant.