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Date: 11/06/2009 11:30 AM

Subject: UK comments on Ukraine CTF investment plan

#### Patricia

Please see attached the UK's comments on Ukraine's CTF investment plan, as requested at last week's trust fund committee meeting. Very happy to discuss.

Best wishes Vicky

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### UK suggestions for further work on the Ukraine Investment Plan

#### Overall assessment of initial submission

We are supportive of a Ukrainian bid to the CTF. There is capacity for extensive energy efficiency measures and development of the renewables sector in Ukraine, which would support both low carbon development and energy security objectives. The proposal contains some interesting elements not seen in any of the other investment plans – in particular, the <u>refurbishment of buildings</u> aspect of the plan. This element seems to have the greatest potential to impact the poor in that it could generate jobs in a sector that could likely grow. This aspect of the plan appears to have the greatest transformational potential. Reducing the energy consumption in buildings is a vital aspect of reducing GHGs and needs to be ramped up considerably. It is important to capture the <u>lessons learnt</u> aspect of this element of the plan in order to ensure its replicability.

The renewal of the <u>gas infrastructure</u>, while likely to result in savings of GHGs, doesn't contain the same level of transformational potential. In fact it is something that would need to be done in the normal course of updating and maintaining the infrastructure over time and doesn't warrant CTF support.

The development of <u>renewable energy</u> is welcomed but needs to demonstrate that it can be self-generating and bring about a shift in the market that makes it an attractive proposition for larger scale implementation.

There are also questions around the <u>combined cycle gas turbine plant</u> and its transformational potential. It seems that CTF support is sought in order to make it economically viable. The need for an investment in <u>smart grid</u> technology at the current stage of its development is also questionable.

## Suggestions on how the plan can be improved

The key ingredient we are looking for in an investment plan is the extent to which it will bring about <u>transformation</u> in the sector that it targets. The plan needs to demonstrate that it will bring about a shift in the conditions that operate within the sector. Linked to this is the extent to which the plan will <u>leverage other resources</u> to scale up the changes that are made. It is also important that the changes made are <u>permanent</u> and lead to <u>long-term sectoral growth and development</u>.

In general, the plan would benefit from <u>more quantitative detail</u> to aid an assessment of the case for CTF financing (the guidelines on investment plans call for indicators to be established to help measure results). To be specific:

- At present, the plan does not contain enough <u>economic data</u> for example, for CTF investment per tonne of CO<sub>2</sub> reduced, rates of return or risk premiums. There are also no attempts to use learning curves, or some other method for <u>estimating cost-reductions</u> due to scale-up (scaleup is a key area to be addressed, according to the guidelines).
- The three scenarios in the plan of BAU, CTF impact and scale-up are not related fully to any of the specific interventions that are planned. Again, this would be helpful in order to place the anticipated impacts of the investment plan elements in context. Some figures are given in different parts of the proposal that allow a degree of assessment of the demonstration/transformation potential but this is difficult to do and could easily result in error. It would be helpful to address this directly and explicitly for each intervention.
- There is little attention to <u>reductions in energy intensity of GDP</u>, apart from the implications of improved energy efficiency. Again, more direct, explicit and quantified information would be helpful.

# Clean power

It is not entirely clear what the <u>rationale is for CTF funding</u> for the proposed CCGT CHP plant of 450MW. It will use <u>internationally proven technology</u> (Mitsubishi turbines with efficiency of 58%) that has been in operation for many years in other countries. Whilst there may be a need for finance per se to realise this investment, <u>the case for specific assistance from CTF has not been made</u>.

The plan would be more pertinent to the CTF criteria if it gave more detail on the way in which this initial plant will be used to gain experience – and to trigger a broader programme of such plants to replace old coal-fired units. The plan states that only five such plants are projected to be installed (of 500 MW each) by 2020. It would be helpful to include some explanation of why this figure is so low when there appears to be a good energy efficiency and carbon emissions case for the technology. Total generation capacity is projected to be 37.6 GW of thermal by 2020 (under the low carbon development path) so there looks like scope for much greater scale than just five CHP plants if new plants are sited appropriately.

In addition, if there was a plan to <u>manufacture turbines locally</u>, to reduce their <u>costs</u> and <u>hence lead to widespread deployment while creating jobs and <u>building capacity</u>, the plan would have some transformational elements.</u>

To explain this further, the investment plan would therefore benefit from <u>more detail on the learning processes that will contribute to replication</u> – whether to five plants or a larger programme. In particular, the plan should <u>explain how the policy and regulatory environment will be modified</u> to facilitate this broader

programme of investment, and <u>how barriers</u> to investment by power companies inside and outside the Ukraine <u>will be overcome</u>.

## Smart grid

The plan is quite <u>vague</u> about this element – perhaps due to a fundamental misconception. This part of the plan is <u>not about smart grids</u> (at least as defined in many other countries). The Ukrainian power system currently has very low levels of intermittent wind plant – a situation that will remain despite anticipated growth due to investment in wind facilitated by this plan (up to 250MW). Therefore, there is <u>no need for a sophisticated 'smart grid' approach</u> to deal with large contributions from such intermittent plant for the foreseeable future.

Instead, the plan would benefit from being focused on the more prosaic but essential issue of <u>upgrading the grid and improving its efficiency by reducing losses</u>. The losses in Ukraine (15%) are very high, as the plan acknowledges. The plan should therefore <u>state how this figure will be reduced through CTF funding</u> – and say more specifically what form the interventions will take.

The plan is clearer with regard to <u>smart meters</u> – but should <u>include an indication of what kinds of savings consumers would be able to realise.</u> Without some attempted quantification (with assumptions explained) it is difficult to assess the transformation potential of this element of the plan.

#### Gas network

The <u>transformational potential of this element of the plan looks limited</u> in its current form – at a maximum of about three. This derives from the estimated saving of 1.5mtCO<sub>2</sub>e per year for the 30% of compressors upgraded with the CTF money – and the potential to increase this to 5mtCO<sub>2</sub>e per year if this were replicated throughout the Ukrainian network. One aspect that might help to increase this is the <u>potential for co-generation of electricity from the new compressor stations</u>. At the moment, this is not very well explained, with little or no detail. What sort of capacity is plausible for each of these generators, for example – and <u>how much coal fired generation would they displace</u> (and with what implications for emissions)? Will the co-generation technology be established or new/novel? It would be helpful to elaborate these aspects in order to assess the transformational potential of this part of the investment plan.

It would be useful to have more information on how the element of the plan around upgrading the gas transit system <u>dovetails with the package of support agreed in March by Ukraine, the EU, EBRD, EIB and WB for the rehabilitation of the gas network and other EU/IFI funding packages for related gas projects including gas storage.</u>

Other impacts need to be discussed in more detail, such as <u>environmental cobenefits</u>. At present, the plan focuses on the <u>security</u> dimension – reduced

imports from Russia – with  $\underline{\text{much less emphasis on the impact on emissions}},$  which is the main focus of CTF funding.