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Att: CDM Executive Board

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QUESTIONS RAISED BY CDM EXECUTIVE BOARD MEMBERS	RESPONSE SUMMARY FROM DNV	ACTION TAKEN (IF RELEVANT)
Q1: The DOE is requested to further substantiate the appropriateness of using economic comparison analysis (i.e. comparing LCOE of all baseline alternatives) to demonstrate additionality, as it has not validated how the baseline alternative is available to the project participant, as required by the ACM0013 v04 page 5.	As required by the ACM0013, version 04, page5, in the case Option II (Investment comparison analysis) is applied in Sub-step 2b, it should be demonstrated that the baseline alternative is available to the project participant(s). As part of the validation CL 3 was raised requesting the PP to demonstrate whether the baseline alternative is available to the project participant or not. The PP replied that the project developer Guangdong Huizhou Pinghai Power Station Co., Ltd. has experience in coal-fired, hydro, wind, LNG and nuclear power generation plants (http://www.gdyd.com/yuedian/About/), thus all the alternatives are available to the PP, but most of them shall be excluded for the reasons as described in PDD. Furthermore, besides to USC coal fired plants, PP also developed 600MW	Further information has been included in the section B.4.5 of the validation report, revision 03.

	<p>sub critical and super critical power plants. This can be further checked by the following web links: http://www.gdyd.com/news/movement/201105/35780.html and http://www.gdyd.com/yuedian/Member/Holdings-1/201001/6928.html. As part of validating the response provided by the PP, DNV reviewed the website of Guangdong Huizhou Pinghai Power Station Co., Ltd. to confirm that the baseline alternatives are available to the project participant.</p>	
<p>Q2 The DOE is requested to further justify how it has validated the baseline identification, in particular: (a) alternatives of power plant with capacity 2x600 MW having output and service comparable to the project activity, in accordance with the ACM0013 v04 page 3; and (b) the exclusion of alternative of natural gas power plants based on base/peak load service, as per ACM0013 v04 page 8.</p>	<p>(a) In accordance with ACM0013, version 04, page 3, the alternatives need not consist solely of power plants of the same capacity, load factor and operational characteristics, however they should deliver similar services (e.g. peak vs. baseload power). According to the FSR and Grid Connection Agreement from the grid company (China South Grid), the proposed project will deliver the service of both base load and peak load. It means according to the requirement of the grid company, the proposed project shall sometimes act as base load and sometimes as peak load. The 2x600 MW plant has a lower capacity than the proposed projects, but as per ACM0013, version 04, page 8, the plant has a comparable size (the range from 50% to 150% of the rated capacity of the project plant) to the proposed projects and it can still provide similar services for both base load and peak load (http://www.cec.gov.cn/info/NewsDetail.jsp?news_id=8645). (b) As per ACM0013, version 04, page 8, peak load is defined as a load factor of less than 3,000 hours per year. DNV checked the China Power Yearbook 2009 page 704 and found that natural gas plants connected to the SCPG all had annual operating hours below 3,000 hours (2680, 2498 and 2,805). Thus DNV confirm that the exclusion of the alternative of natural gas power plants based on base/peak load service is reasonable.</p>	<p>Further information has been included in the section B.4.5 of the validation report, revision 03.</p>
<p>Q3 The DOE is requested to further explain how it has validated the input values in the levelized cost analysis, in line with the VVM</p>	<p>(a) The investment cost, the coal consumption, the coal price and each component of the O&M cost are all from the approved FSR, which was verified in accordance VVM paragraph 111 (c) and the information contained in the FSR was crosschecked with the “Referenced Cost Index of Power Engineering and Design 2007” published by China Power</p>	<p>Further information has been included in the section B.4.5 of the validation report, revision 03.</p>

<p>version 01.2 paragraph 111, as sufficient information has not been provided how the DOE validated, for the three alternatives:</p> <p>(a) the investment cost, the coal consumption, the coal price and each component of the O&M cost. In doing so, the DOE shall also substantiate the different assumptions taken for each alternative;</p> <p>(b) the operational hours. In doing so, the DOE shall also explain the relevance of referring to the Grid Connection Agreement (e.g. stipulates minimum operational hours); and</p> <p>(c) the exclusion of potential revenue from the sale of the ash.</p>	<p>Engineering Consulting Group Corporation in accordance with VVM paragraph 111 (b).</p> <p>(b) The annual operation hours used for calculation of the LCOE of the proposed project, 600 MW subcritical coal-fired power plant and 600 MW super-critical coal-fired power plant are all 5,500 hours which is sourced from the approved FSR. Besides, the same value is also stated in Referenced Cost Index of Power Engineering and Design 2007 for the three technologies above. Furthermore this was crosschecked with the annual average operation hours of thermal power plants in China from 2004 to 2007, which is about 4,500 hours to 5,500 hours. Finally, according to the Grid Connection Agreement from the grid company (China South Grid), the operating hours for the proposed project is defined as 5,500 hours. Therefore, the annual operation hours (5 500 hours) used for calculation LCOE are considered to be reasonable. The same number of operating hours is considered for the registered project # 3288.</p> <p>(c) The potential revenue from the sale of the ash only represents a small part of the O&M costs. Hence, it was excluded in the FSR. However for the purpose of responding to this request for review, the design institute calculated the potential revenue from the sale of the ash as 45.8325, 29.052 and 28.458 million RMB for the proposed project, a 600 MW subcritical coal-fired power plant and a 600 MW super-critical coal-fired power plant respectively. Thus the potential revenue represents only 2% of the O&M costs. Even when including these revenues in the LCOE calculation, the LCOEs for the proposed project, a 600 MW subcritical coal-fired power plant and a 600 MW super-critical coal-fired power plant can be calculated as 0.3141, 0.3068 and 0.3087 RMB/kWh, respectively, which means that the 600 MW super-critical coal-fired power plant is still the baseline.</p>	
<p>Q4</p> <p>The DOE is requested to further explain how it has validated the energy efficiency of the power</p>	<p>The energy efficiency of the power generation technology that has been identified as the most likely baseline scenario is calculated by the gross energy efficiency used in the baseline determination of 41.98%, the power plant self use rate of 5.5% sourced from Referenced Cost Index of Power</p>	<p>Further information has been included in the section B.4.8 of the validation report, revision 03.</p>

<p>generation technology that has been identified as the most likely baseline scenario (38.1%), in line with the ACM0013 v04 page 10.</p>	<p>Engineering and Design 2007 and the average line loss rate of 6.76% in SCPG in 2007. The net energy efficiency can be calculated as 37%. Furthermore, DNV also checked the gross energy efficiency of 41% at optimum load of the 600MW supercritical power generation technology provided by a manufacturer of Dongfang Electric Corporation who built the first 600MW supercritical power generation set in China. (http://xn.114chn.com/TradeWeb/web/NewIndex/NewsShow.aspx?ID=6301000809300001&channelID=05&NewsID=86699)</p> <p>However as required by the ACM0013, version 04, page 10, the efficiency should be determined as the efficiency at optimum load as a conservative approach. Thus the PP adopted an even higher efficiency of 38.10%, which is calculated based on the efficiencies of newly built top 30 performing 600 MW coal-fired power plants sourced from the Statistics by the State Electricity Regulatory Commission (SERC) and Data from the NDRC.</p> <p>DNV has verified the data source and the calculation process and can thus confirm that the adoption of 38.10% in the emission factor calculation is considered to be appropriate and conservative.</p>	
<p>Q5</p> <p>The DOE is requested to substantiate how the project complies with the ACM0013 v04 page 9, as the list of the plants identified in Steps 3 and 5 to determine the baseline emission from Option 2, as well as relevant data on the fuel consumption and electricity generation of all identified power plants has not been provided.</p>	<p>In accordance with ACM0013, version 04, page 9 , all steps should be documented transparently, including a list of the plants identified in Steps 3 and 5, as well as relevant data on the fuel consumption and electricity generation of all identified power plants.</p> <p>The list of the plants identified in Steps 3 and 5 (top 15% coal-fired power plants in SCPG) and the relevant data on the fuel consumption and electricity generation of all identified power plants was documented transparently by the Chinese NDRC. However, as the information is classified by China NDRC as confidential information, DOEs can only check and review it in NDRC's offices. DNV has verified the top 15% coal fired power plants by means of validation at NDRC's premises and could confirm the information presented by NDRC and the list of the plants within SCPG.</p>	<p>Further information has been included in the section B.4.8 of the validation report, revision 03.</p>