Considerations about the Abadi-Masela Gas Project

May 2017

Regarding the Abadi-Masela gas project in Eastern Indonesia, with its proposed very deep water pipeline, it is worthwhile remembering that in a chain of events the failure of only link is sufficient to ensure the failure of the whole, and there is no way anyone will lay a single heavy pipeline designed to carry 1.25 billion cubic feet of gas per day across a 1,500 m deep trough. Three or more lighter pipelines would be required, which is quite impractical and also risky.

A pipeline to Selaru or Yamdena, in the Tanimbar Islands, would be a massive technological challenge. At 150 km in length, and at least 36" in diameter, its wall thickness would be at least 1.25 inch. The topography of the 1,500 m deep trough between Abadi and Selaru is quite difficult already, but on top of that, in case of accidental flooding during installation in a water depth exceeding 1,500 m, the pipeline free span would weigh 1,400 metric tons, which widely exceeds the capabilities of current pipe laying facilities. There is no facility able to install such a pipeline. Inpex would need to install 3 pipelines, each 20" in diameter, or even 4 pipelines, each 18" in diameter. That option is also quite impractical.

It is doubtful that the project will go ahead onshore the islands of Yamdena or Selaru. It seems Masela is a repeat of Greater Sunrise, even magnified, technical realities being starkly ignored by most commentators, except for the Aru option, which involves a 500 to 600 km pipeline (depending on where it lands) in relatively shallow water and only marginally longer than a pipeline to Darwin. The deepest portion of that pipeline would be the Abadi-Masela field itself. Aru is on the same continental shelf as Masela. Tanimbar is across the deep trough. The 42" or so Aru pipeline needed for the production of 9.5 million tons per year is feasible. The 150 km pipeline to the Tanimbar Islands is not. For reference, the 26" Bayu Undan pipeline is 500 km long and the 42" Ichthys pipeline is 890 km. The Aru pipeline could cost less than $1,500 million, probably the cheapest item in the project. It is interesting that critics compare only the length of the pipelines but ignore other physical realities. It is rather unconvincing that Tanimbar could be Inpex' preferred location for a large plant, except if their motive is to procrastinate until gas prices rise.

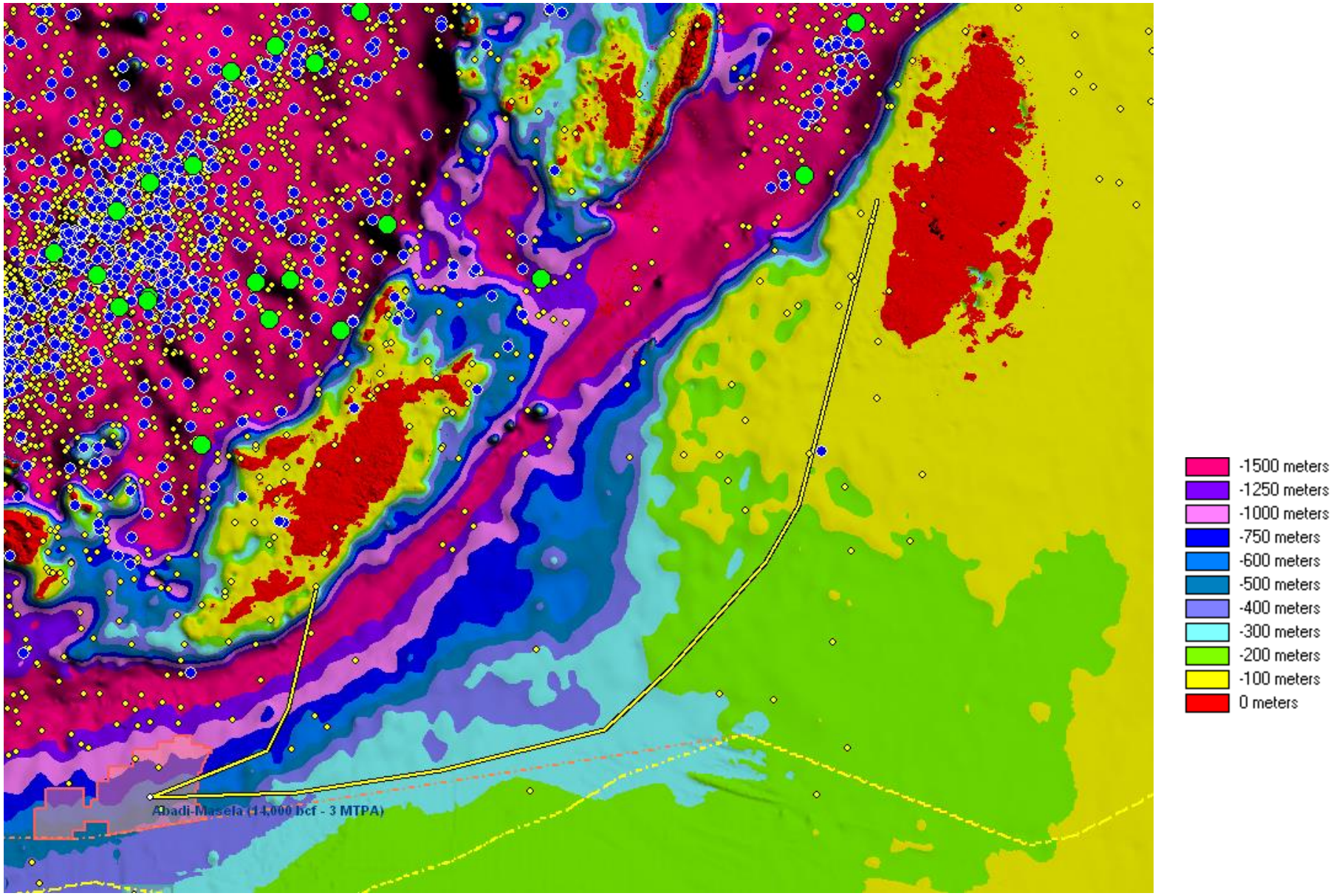
Both islands are mostly Christian, 75% in Tanimbar and 90% in Aru, where only about 4% are Muslims.

The Indonesian government estimates the cost of Inpex's Masela project at between $14 and $19 billion for a gas production 9.5 MTPA. It is unclear why the Masela project, built in a difficult environment and in locations devoid of any existing infrastructure, in an economically and politically unreliable nation, could cost half as much as the more amenable Ichthys project in the industrialized northern part of stable Australia. From a purely economic standpoint, and considering the recent natural gas developments in the region, such as Gorgon (15.6 MTPA, $54 billion, offshore gas), Ichthys (8.9 MTPA. $37 billion, offshore gas), Prelude (3.6 MTPA, $15 billion, offshore gas), Wheatstone (8.9 MTPA, $34 billion,

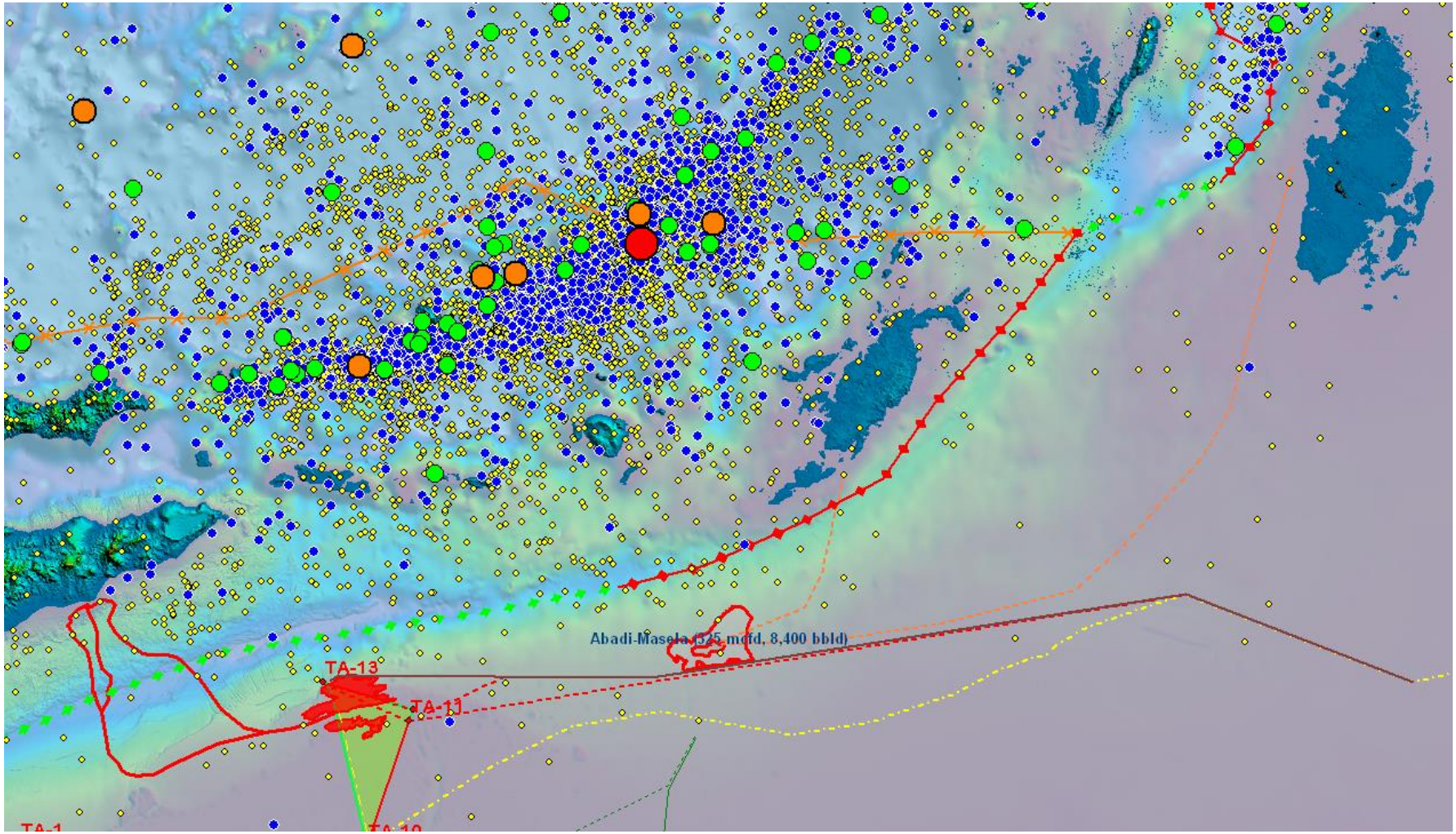
offshore gas), APLNG (9.0 MTPA, $26 billion, onshore gas), GLNG (7.8 MTPA, $19 billion, onshore gas), or QCLNG (8.6 MTPA, $21 billion, onshore gas), and the recently shelved $40 billion Browse LNG project, it is rather improbable that the remote and isolated 9.5 MTPA Abadi development, in a much more difficult environment, could be as cheap as $14 or even $19 billion, otherwise one would think the project would already be going ahead with great fanfare, as the greatly enhanced profits would have made all parties quite generous and the project would have sucked in all available financial resources.

The future of the Abadi-Masela project is becoming increasingly questionable.

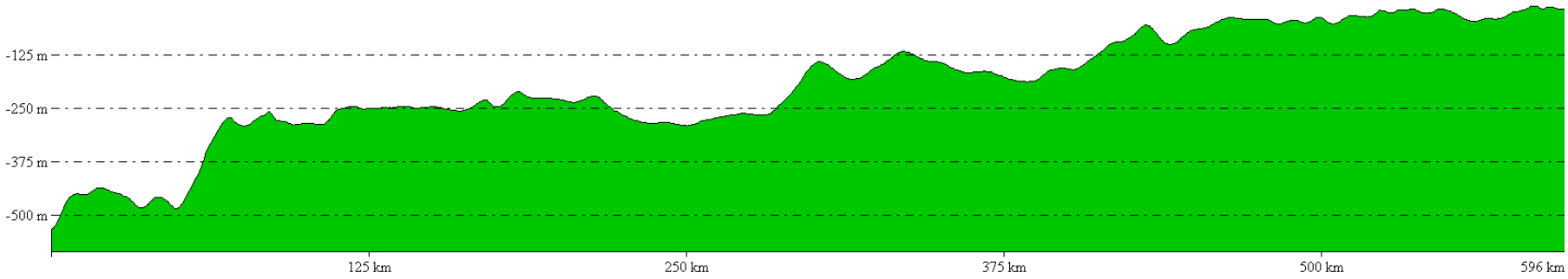
Dots are earthquakes recorded since 1973 (yellow: minor; blue: moderate; green: strong). Tanimbar-Yamdena-Selaru center left; Aru top right. Both islands are un-seismic.



The Timor Trough, which is a transform fault south of Timor, is thought to become a spreading ridge south of Masela-Tanimbar, but with no accompanying seismicity. If anything, seismicity is there even more benign than between Sunrise and Timor.



Abadi to Aru profile



Abadi to Yamdena profile (same scale)