

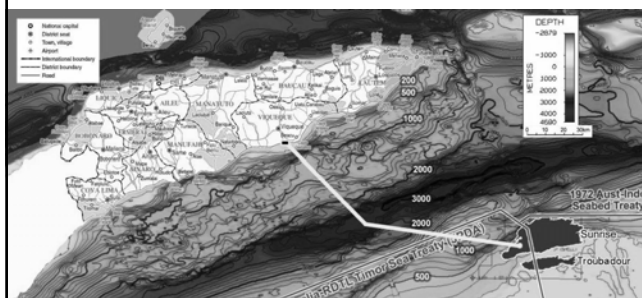
Sunrise LNG in Timor-Leste Dreams, Realities and Challenges



La'o Hamutuk

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If the gas pipeline comes from Greater Sunrise to Timor-Leste



How can we maximize the benefits
and minimize the risks?

Benefits from LNG in TL

- Tax revenues
- Jobs for Timorese workers
- Subcontracts to local businesses
- Develop infrastructure
- Motor for economic development
- Facilitate secondary industries

Accomplishing these dreams requires realistic planning, farsighted actions, and hard work.

Risks from LNG in TL

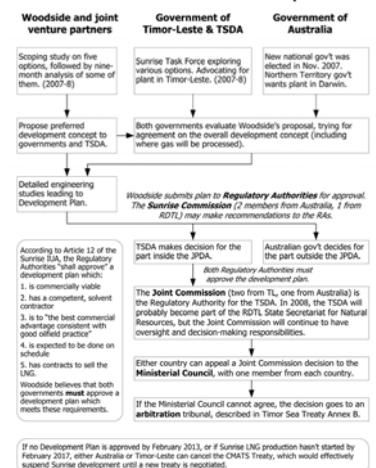
- No significant tax revenues
- Deeper dependency on petroleum industry
- Nearly all jobs go to foreigners
- Environmental damage
- People displaced
- Land and sea lost for agriculture, fishing, etc.
- Catastrophic accidents
- Violations of human and community rights
- Enclave project doesn't employ Timorese or enhance local infrastructure or industry

These consequences are typical of petroleum projects in many countries.

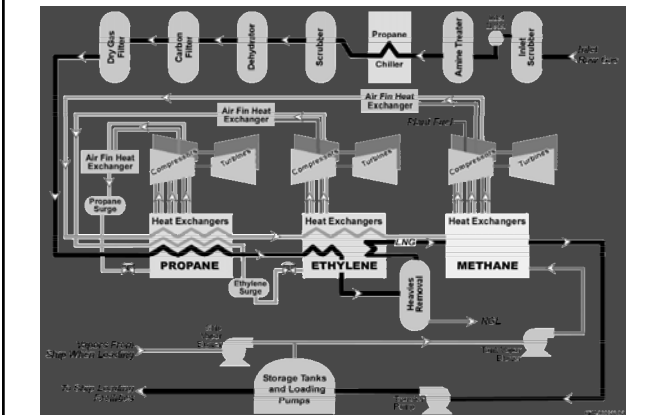
Options from Woodside

1. Transporting the gas to Australia and processing it at an existing or new LNG plant in Darwin.
 2. Processing the gas at sea at a floating LNG plant; this would be one of the first such plants in the world.
 3. Transporting the gas to Timor-Leste and processing it at a new LNG plant in Timor-Leste.
- La'o Hamutuk has suggested another option
4. Wait to start Sunrise production until Bayu-Undan revenues are no longer sufficient to meet Timor-Leste's needs, about seven years from now.

Who will decide where Sunrise Gas is processed?



ConocoPhillips LNG process



LNG plant in Darwin, Australia



LNG plant in Snøhvit, Norway

This LNG plant has just begun operation on an isolated island in far north Norway.

Like Timor-Leste's Tasi Mane coast, Melkøya island had little existing infrastructure or local workforce; everything and everyone was brought in from outside.

Satellite photo from Google Earth.



Siting considerations

- To reduce costs, the pipeline should be as short and shallow as possible. It must also avoid unstable or very steep sea bottoms.
- The plant needs flat land, 1-2 km² or about 30 football fields.
- Soils must be stable to support heavy equipment.
- Large LNG tanker ships must have reliable access.
- Existing uses of land and sea areas should be respected.
- For Timor-Leste to benefit, the site should be accessible to local people and integrated into the road network.

Possible locations in Timor-Leste



Pink and red are ecologically protected areas. Green is flat land. Red dots are population centers.

The plant should help Timor-Leste, not just be located here.

- For Timor-Leste's people to benefit from this project, and for communities to welcome it, it must be based on mutual respect.
- The Government and the companies must be transparent, communicative and consultative.
- The companies must honor the rights of local people, hire them, and use local suppliers.

Phases in the project life

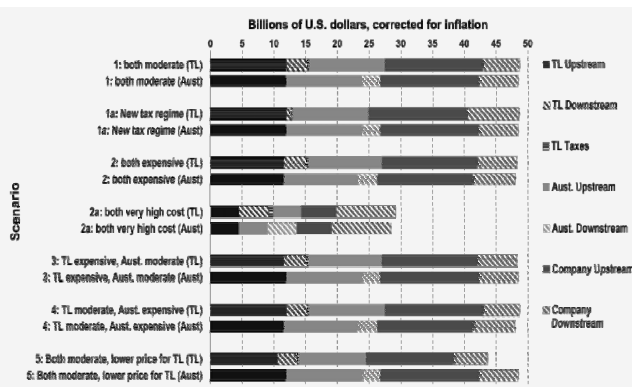
1. **Construction: 3-6 years, 2000 jobs**
 - **Site preparation:** roads, temporary buildings, clearing, excavation, electricity, water, construction dock.
 - **Secondary facilities:** heliport, power generator, buildings, housing for workers, offices, waste treatment.
 - **Gas processing components will be built overseas and shipped in.**
2. **Operation: 30-50 years, 200 jobs.**
 - It will also accumulate garbage, waste, and toxic chemicals, as well as releasing pollution into the air, land and water.
3. **When the gas is all used up, the plant becomes useless and the companies will go away. Timor-Leste must ensure that they don't leave us with their waste.**

Tax revenues to Timor-Leste

There are three main components:

1. **Income (profit) tax from the project itself. This is currently 30%, which could raise about \$3.5 billion over the life of the plant.**
(However, the government proposes to cut it to 10%).
2. **Withholding tax on purchases of construction services, totaling about \$140 million.**
3. **Wage and income taxes on Timorese people and businesses employed by the plant or receiving subcontracts or supplying services, totaling about \$100 million.**

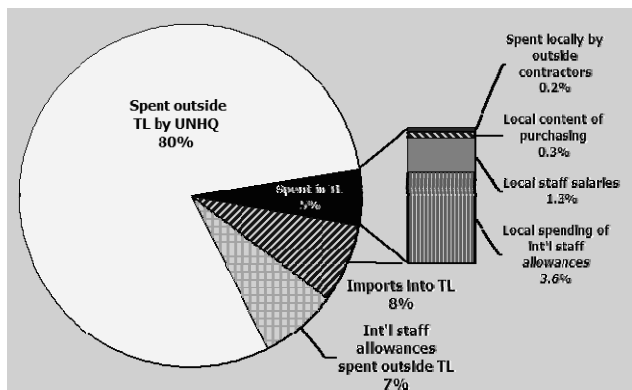
Dividing Sunrise gas profits



Local economic involvement

- **Hiring Timorese workers, especially for construction. Initially, these will mostly be low-wage jobs.**
- **Buying materials from local suppliers, but currently few local suppliers exist.**
- **Purchasing support services from local businesses, including security, transport, housing and food for foreign workers.**
- **Once construction is done, the plant will be mostly self-sufficient, employing only about 200 workers.**

UNTAET/UNMISSET spending 1999-2004 95% never came to Timor-Leste.



Integrating into infrastructure

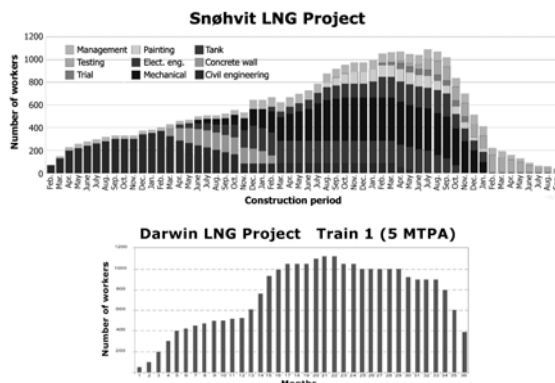
- **Domestic energy:** the plant could provide electricity for the nation.
- **Piped or bottled gas, LPG or condensate** could replace wood or imported fuel for household use.
- **The harbor and/or construction port** could also be a commercial port.
- **Auxiliary industries, such as fertilizer or other petrochemicals,** could piggyback on the LNG plant to develop Timor-Leste's economy.

Advance planning is essential.

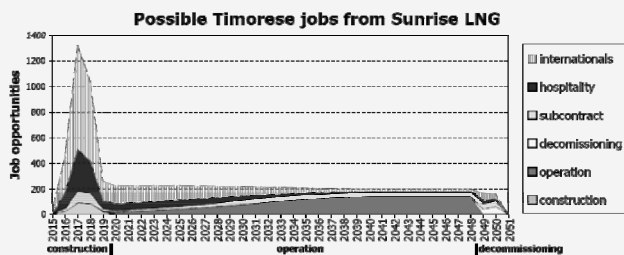
Employment

- **Construction:** 3-6 years, as many as 2,000 jobs at peak. Most will be foreign workers, but Timorese can provide support services.
- **Operations:** 30-40 years, 250-300 permanent jobs. Most will require high levels of skills and experience. Over time, Timorese could fill nearly all these positions.
- **Secondary jobs:** The LNG plant will create some spin-off jobs through its use of goods and services provided by local businesses and the community. At Snøhvit, this was estimated to be the same number of jobs as direct employment, although some of these will also go to foreigners.

Construction jobs at other plants



Timorese jobs over plant lifetime



Includes subcontracts and spinoff-jobs, but not potential follow-on industries.

This assumes our recommendations for preparation, education and local employment and procurement are implemented.

Environmental impacts

- Land and sea use, displacing or disrupting people, livelihoods (fishing, agriculture), religious and cultural activities.
- Loss of environmental stocks; possible impact on national park and other protected areas.
- Pollution, noise and waste from normal activities.
- Accidents, fires, explosions or spills.
- Influx of thousands of foreign construction workers.
- Global climate change. This plant will multiply Timor-Leste's greenhouse gas emissions by 30 times from current levels unless CO₂ it releases is kept out of the atmosphere.

Timor-Leste does not yet have effective laws for Environmental Impact Assessment or overseeing plant construction and operations.

Potential hazards

- Accidents on land or sea, including fires, collisions and spills.
- LNG can burn or explode if spilled in a confined space or over water.
- Storage tanks and other facilities must withstand high stresses due to extreme cold temperatures.
- Other materials and wastes on site, including propane and LPG, pose potential dangers.

At present, Timor-Leste is totally unprepared to deal with any catastrophic event.

Effects on women

- Compensation for land displacement often goes to men or traditional leaders, although women are also displaced.
- Women are responsible for water, food and health for their families, which may be disrupted by an LNG plant.
- Training and employment programs often forget women.
- Prostitution, trafficking and domestic violence often accompany foreign workers and economic polarization.
- Justice and traditional dispute resolution mechanisms frequently discriminate against women.

Women fill essential roles in family, society and nation-building. They are particularly vulnerable and often excluded from political and community decisions.

Political impacts

- Huge amounts of money involved in oil and gas projects often bring corruption and violence.
- Leaders of both governments and companies can put their personal interests above the law or their employers.
- Local communities can be alienated from a nearby LNG plant if they feel excluded from its benefits.
- Plant operators may violate human rights or deploy militarized security if they feel their operation or investment could be endangered by hostile local people.
- Customers purchasing LNG from this plant must be confident that their LNG supply is dependable.
- This will add to Australia’s many interests in Timor-Leste.

Recommendations: Advance planning

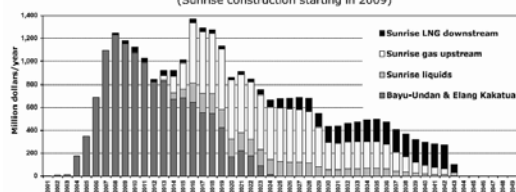
1. Men and women in affected communities must be well-informed and consulted about the project.
2. Laws should manage and protect land rights, environment, sacred places, workers’ rights, transparency, public consultation and conflicts of interest.
3. Timorese people must be prepared for higher-skill jobs in the project, with programs for scholarships, apprenticeship and education.
4. Emergency response must be greatly improved to handle disastrous accidents and spills.
5. The project should be integrated into local economic development plans, as it will need water, electricity, land and sea transport and other infrastructure.

We need to act now to benefit from Sunrise LNG.

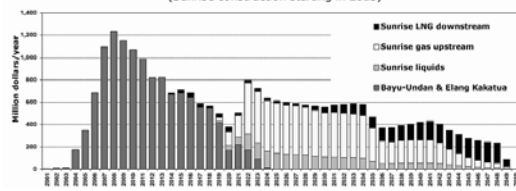
Reasons to delay Sunrise

1. More time to train our workforce and develop secondary businesses, increasing revenues into our economy.
2. Time to implement and gain experience with environmental laws and other legal prerequisites for a successful project.
3. Regulators have time to develop their capacities, so that they can ensure that the project serves Timor-Leste’s interests.
4. We can benefit from improvements in rapidly-developing LNG and deep water pipeline technology.
5. Current very high construction costs will probably go down.
6. Revenues will increase, as the sales prices of oil and gas is almost certain to go up over the long term.
7. We could renegotiate the CMATS treaty, achieving a maritime boundary and a greater share of our resource entitlement.

Timor-Leste Annual Petroleum Revenues
(Sunrise construction starting in 2009)



Timor-Leste Annual Petroleum Revenues
(Sunrise construction starting in 2015)



Recommendations: Economic issues

1. The proposed corporate tax reduction from 30% to 10% will give up \$2 billion from the LNG project.
2. Studies should be made about how the plant’s power generator, construction dock and other infrastructure can benefit local economic development.
3. Government should develop the local private sector, through training and financial support, so that Timorese businesses will be able to provide services needed by the LNG project. Legal changes should facilitate local businesses and cooperatives.
4. Contracts, laws and other policies should encourage companies to hire local workers and to buy products and services from Timor-Leste.

The money will go abroad if we don’t make it come to Timor-Leste.

Recommendations: Employment

5. Government should start now to prepare people with specific job skills which will be needed by the project.
6. Vocational education must be strengthened, and the quality and capacity of university engineering departments should be increased.
7. The Labor Code and Health and Safety laws should be revised with clear regulations about working hours and conditions, hazardous environments, injuries and deaths.

If we want good jobs in this multi-generational project, we must have qualified workers.

Recommendations: Social and cultural issues

- 8. Land and property rights must be clarified for individual and collective ownership, with fair compensation for land and waters used or impacted by the project.
- 9. Contracts with companies should include coordination and dispute resolution mechanisms to minimize conflict between foreign workers and communities.
- 10. All institutions should give special consideration to gender issues, to avoid perpetuating discrimination against women.

People should welcome this project, not have it imposed on them.

Recommendations: Environment

- 11. Government should revise the Environmental Assessment Law and guidelines, including requiring detailed Environmental Management Plans and extensive consultation at all levels.
- 12. The Pollution Control Law should limit releases of pollutants, including greenhouse gases. It should specify waste disposal requirements and include effective monitoring and regulatory mechanisms.
- 13. Laws should require decommissioning to protect our environment after the companies have left.
- 14. Every law should be specific, with effective enforcement and sanctions severe enough to compel compliance, in force before contracts are signed.

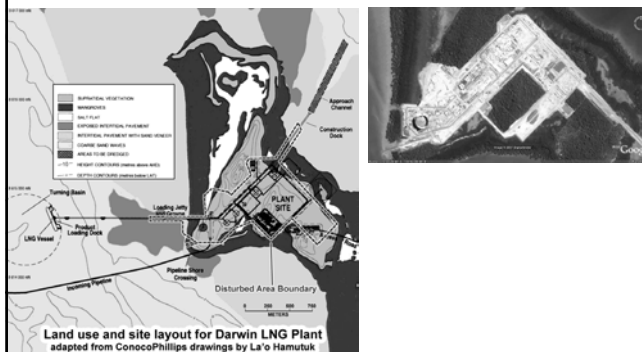
If Timor-Leste's Government doesn't protect our environment, nobody else will.

Remembering what's important



Thank you. Any questions?

The Darwin plant site



The first of six scenarios

Table 3. Scenario 1: Base case	Location of LNG plant			
	Timor-Leste		Australia	
Downstream project:				
LNG sales price Freight on Board (F.O.B)	\$7.50		\$7.50	
Total fixed costs of downstream project	\$2,075		\$2,075	
Net pre-tax income (total downstream net revenue)	\$9,137		\$9,137	
Net post-tax income: Downstream private profits	\$5,732	62.7%	\$6,183	67.7%
Timor-Leste take of downstream net revenue	\$3,405	37.3%	\$0	0.0%
Other Timor-Leste tax revenue	\$235		\$0	
Australia take of downstream net revenue	\$0	0.0%	\$2,954	32.3%
Upstream project (after CMATS redistribution):				
Netback price to upstream project (real)	\$5.26		\$5.26	
Total fixed costs of upstream project	\$1,450		\$1,450	
Net pre-tax income of upstream project	\$39,322		\$39,322	
Net post-tax income: Upstream private profits	\$15,458	39.3%	\$15,458	39.3%
Timor-Leste take of upstream profit	\$11,932	30.3%	\$11,932	30.3%
Australia take of upstream profit	\$11,932	30.3%	\$11,932	30.3%
Totals for project				
Net total pre-tax income	\$48,459		\$48,459	
Total Timor-Leste take of project profit	\$16,338	31.7%	\$11,932	24.6%
Total Australia take of project profit	\$11,932	24.6%	\$14,887	30.7%
Upstream private profit	\$21,189	43.7%	\$21,640	44.7%
Other Timor-Leste tax revenue	\$235		\$0	
Total Timor-Leste tax revenue	\$16,573		\$11,932	

Oil and gas fields near Timor-Leste

