
LNG4LNG
YOUNG ADVISORY GROUP

MOTIVATION

THE **FINANCIAL PROSPECTS** IN THE LNG SECTOR ARE UNCERTAIN

As upcoming regulations significantly limit the exhaust emissions of ships and environmental awareness calls for “green” solutions, the search for alternative fuels is more urgent than ever.

Liquefied Natural Gas (LNG) is one of most popular alternatives, not only because it reduces the emissions for ships, but also because it is cheaper compared to conventional marine fuels.

LNG infrastructure is being developed on all scales and predicted as part of the fundament of the transition to a ‘cleaner future’.

Questions that arise:
Is this feasible for my ship(s)?

What are the financial prospects?

YAG DEVELOPED A MODEL TO ANSWER ALL THOSE QUESTIONS!

LNG MODEL

YAG DEVELOPED A LNG TRANSITION MODEL TO **CALCULATE THE FINANCIAL** FEASIBILITY FOR EVERY TYPE OF SHIP

What does the LNG transition model calculate?

AIM?
It calculates your chances on a good investment, thus whether your case is financial feasible.

HOW?
It takes the total investment and expected operational costs and/ or savings into account in comparison to conventional fuel. The model calculates economic parameters as the NPV, IRR and payback time, that indicate the attractiveness of the investment.

RISKS?
The model copes with uncertainties in the input parameters (e.g. fuel prices); by simulating different scenario’s numerous times automatically. It looks at almost every possible scenario!

For example, a possible outcome could be: there is a 20% chance on a very good investment, 70% chance on a healthy investment and 10% chance on losses, taking all uncertainties into account.

Cost reduction possible?

LNG4LNG MODEL

IN THE LNG4LNG MODEL, THE SPECIFIC BUSINESS CASE WILL BE EXPLORED IN **THREE DIFFERENT PHASES**

1 A quick scan will be made with information provided by the customer. The LNG4LNG model calculates whether the investment is feasible showing a green, orange or red light (go or no-go).

2 The detailed scan is based on more specific information generated in an interview with the client. By this, the case will be deepened and more detailed.

3 The last step involves a fine-tuned and complete scan of the ship.

POTENTIAL POSSIBILITIES OF THE MODEL

The LNG4LNG model is currently focused on short-sea shipping but could also be adjusted to fit the needs for inland shipping. Furthermore, the model is very flexible and could be used for multiple targets:

- Emission reductions
- Best financing structure
- Insights in other financial standards whether a LNG-transition is feasible or not.

INPUT FINANCIAL ANALYSIS

CALCULATIONS ARE BASED ON **SPECIFIC PARAMETERS** OF THE PARTICULAR SHIP, DEPENDING ON THE PHASES OF THE MODEL

FUEL COST REDUCTIONS

Fuel costs
Fuel consumption

CAPITAL EXPENDITURES

Tank & gas system
Engine Installation
Safety systems
Planning & classification
Opportunity costs
Initial schooling

OPERATIONAL EXPENDITURES

Increased bunkering costs
Loss of space
Periodical schooling

ADDITIONAL OPTIONS

Gasboiler
Airconditioning
Power-to-shore

The financial feasibility of the ship is determined with the input named on the left-side. This is dependent on every different phase of the LNG4LNG model. The model calculates the results with the input; parameters are increasingly added per phase. All together, are inputs for the guiding analysis (phase 3).

INPUT FOR THE LNG4LNGMODEL

1. Legitimize
2. Narrowing down
3. Guiding analysis

OUTPUT FINANCIAL ANALYSIS

OUTPUT GIVES INSIGHT IN THE **FINANCIAL FEASIBILITY** OF THE SHIP EXPRESSED THROUGH DIFFERENT PARAMETERS

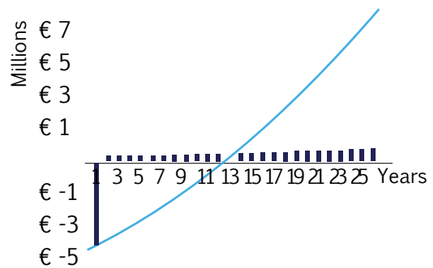
OVERVIEW FINANCIAL OUTPUT PARAMETERS

The different parameters, which indicate financial feasibility, are the following:

1. Internal Rate of Return (IRR):
2. Net Present Value (NPV)
3. Cost analysis of the total investment
4. Sensitivity analysis of the investment
5. Cost analysis of the different input parameters

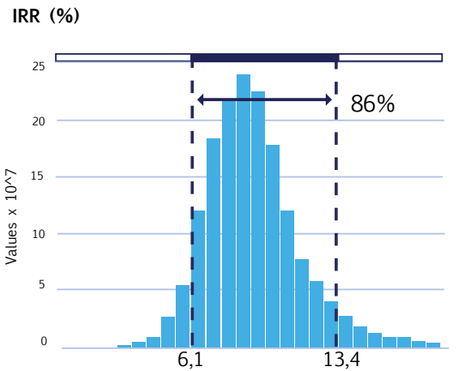
COST ANALYSIS OF THE TOTAL INVESTMENT

Evaluation of all the potential costs and subsequent revenues. Expressed through indicators such as cashflow analysis (presented below), payback time, internal rate of return & net present value.



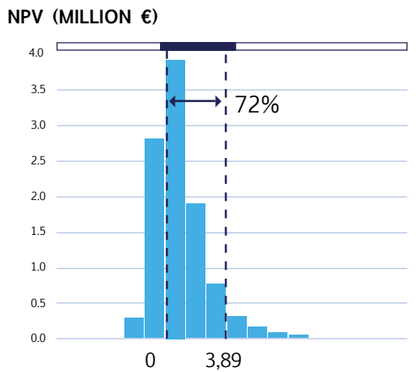
INTERNAL RATE OF RETURN (IRR)

The NPV measures profitability of an investment and is the sum of present values of incoming and outgoing cashflows over a period of time.



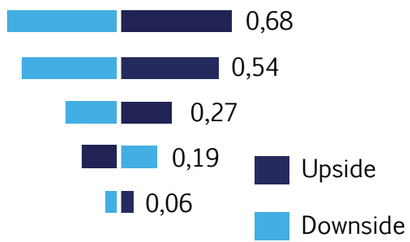
NET PRESENT VALUE (NPV)

The IRR is a method to compare and measure profitability of an investment. It is the discount rate at which the net present value of costs (negative cash flows) of the investment equals the net present value of the benefits (positive cashflows).



SENSITIVITY ANALYSIS OF TOTAL INVESTMENT

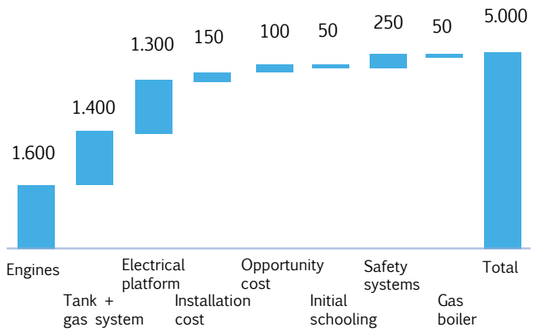
Accounting for uncertainties in the output by apportioning the different uncertainties in the input parameters. Insight into the influence of the changing parameters on the financial end results.



** Strokes represent different parameters in the model*

COST ANALYSIS OF DIFFERENT INPUT PARAMETERS (x €1000)

Analysis of the contribution of every input parameter to the total amount of costs. This graph gives insight in the build-up of cost structure.



CONTACT

CONTACT US NOW AND WE WILL START THE PROCESS TO HELP YOU WITH LNG4LNG!

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LEGITIMIZE
Basic inputs ship: DWT, fuel consumption & age

NARROWING DOWN
Additional inputs: Configuration, sailing profile & engine

GUIDING ANALYSIS
Additional inputs: CAPEX, OPEX, financials & depreciation rate