

## LDPL awarded for transshipment and port operations of Hassyran clean coal power plant project in Dubai

LD Ports & Logistics has been selected to manage the coal handling and transshipment facilities to supply the Hassyran clean coal power project in Dubai.

LDPL has worked closely with ACWA Power and Harbin Electric consortium to develop and propose an environmentally friendly transshipment solution for Hassyran clean coal power plant project. This ultra-supercritical plant is the first coal based power plant in the Middle East and is designed to be a “best in class” plant in terms of efficiency, output and adherence to global environmental best practices.

The consortium has been selected by Dubai Electricity and Water Authority (DEWA) as the preferred bidder for the first phase of the 1,200MW Hassyran clean coal power project. The consortium bid a levelized cost of electricity (LCOE) of 4.501 cents/KWh based on May 2015 coal prices. The plant will start commercial operation by March 2021 with a net output of 1,200MW, representing a 12.5% boost of the Dubai current grid capacity.

“We are delighted to have been selected as preferred bidder for this major project which demonstrates the strength of the company’s technical capabilities and capacity to offer reliable, performing and environmentally friendly transshipment and port operations at a competitive price.” said Emmanuel Dur, Managing Director of Louis Dreyfus Armateurs ports & logistics division. “LDPL’s competencies in Engineering and Newbuildings as well as the project team’s expertise will ensure the project is managed in an exemplary manner. We are enthusiastic to continue supporting Dubai ambitions in providing electricity and water services according to the highest international reliability and availability standards”.

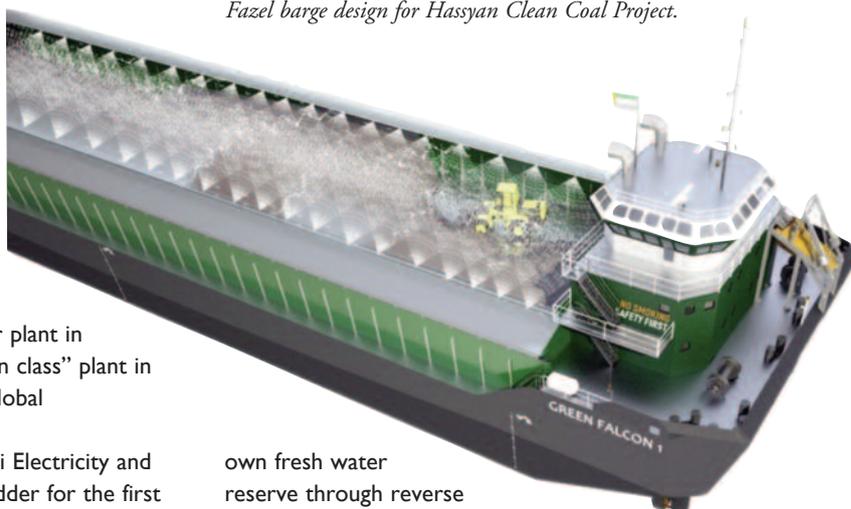
The transshipment solution will consist in Floating Crane Transhipper Units (FCTUs) and highly manoeuvrable shallow draft self-propelled barges that have been specifically designed to meet the environment and natural restrictions of Hassyran project. FCTUs and self-propelled barges will be used to unload capesize vessels and deliver coal at daily rate exceeding 36,000 metric tonnes per day. The coal-fired power plant will produce sufficient electricity to power nearly 250’000 households in Dubai.

### DEVELOPING ENVIRONMENTALLY FRIENDLY TRANSSHIPMENT SOLUTIONS

The sensitivity with respect to limitation of dust emission for Hassyran clean coal project has motivated LD Ports & Logistics to use systems for controlling and suppressing airborne dust emission during coal handling operations. Regarding barging operations, LDPL will use specific barges, especially designed for this project. They are equipped with their own dust suppression systems.

Dust and coal particles will be contained inside the cargo compartment by use of an atomized water screen. This protection curtain covers the whole lengths and both sides of the coal compartment, ensuring an optimal and permanent protection during transshipment, transportation and unloading of barge. Dust emission is therefore fully contained within the cargo space thanks to the steel cover structure and the high pressure atomized fresh water barrier. Each barge generates its

*Fazel barge design for Hassyran Clean Coal Project.*



own fresh water reserve through reverse osmosis process. The cargo space is fitted with a water drainage collection and treatment system on board to recover the coal dust.

### RESEARCH AND DEVELOPMENT IN FRANCE

LD Ports and Logistics focus on offering a one-stop solution, from the mining site to the end users with an expertise that covers the entire maritime value chain.

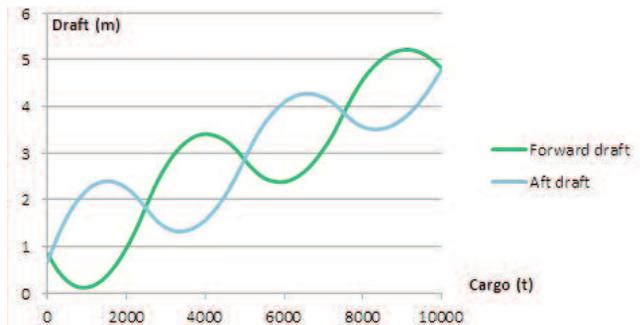
Being a specialized branch of Louis Dreyfus Amateurs, established in France, LDPL can count on highly-skilled engineers, graduated from the France top “Grandes Ecoles” to address their client’s challenges. France is well known the world over as an attractive place to do research and development. LDPL benefits from this entrepreneurial culture and strong sense of innovation to steer their way to success and deliver high value added solutions. The French engineers enjoy an excellent reputation. Some of LDPL’s most critical innovations, like BATOS, Barging and Transshipment Optimization software (refer to Dry Cargo October 2015 edition) has been developed in cooperation with the top university for science and research in Paris. This is why there are numerous good reasons for doing research and develops innovations in France.

The engineering and professional capabilities of LDPL’s team enables to address maritime challenges with confidence and designing barging and transshipment solutions perfectly adapted to the constrains of each project.

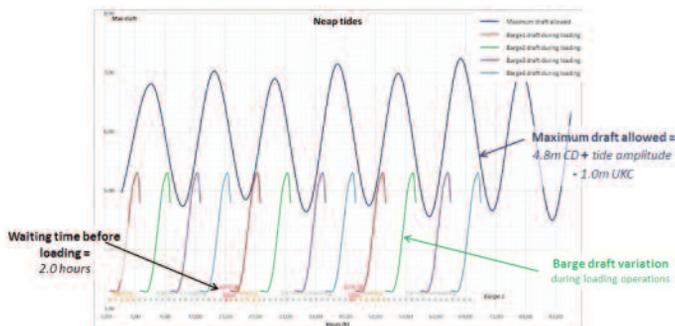
LDPL bring barge optimized loading schemes into focus: They aim at loading barges with optimum cargo quantities and following the appropriate loading sequence so that a safe under keel clearance can be maintained at any moment of the tide, while maximizing the cargo intake.

An advanced model calculates draft variation due to trim motions for different tide and wave scenarios. This barge loading simulation determines the trim allowance needed, depending on the type of loader used (traveling, fix, rotating chute etc.), water level variation and number of loading passes. Such studies are critical to identifying the most efficient barge loading facilities. The model also points out the exerted bending moments and shearing forces. A comprehensive barge trimming and stability calculation is eventually performed to ensure that barge can be loaded and depart without any risk of grounding.

Furthermore, by controlling the trim of barges and along with an analysis of the tidal variation during all the loading progress – for different types of tides, LD Ports & Logistics can



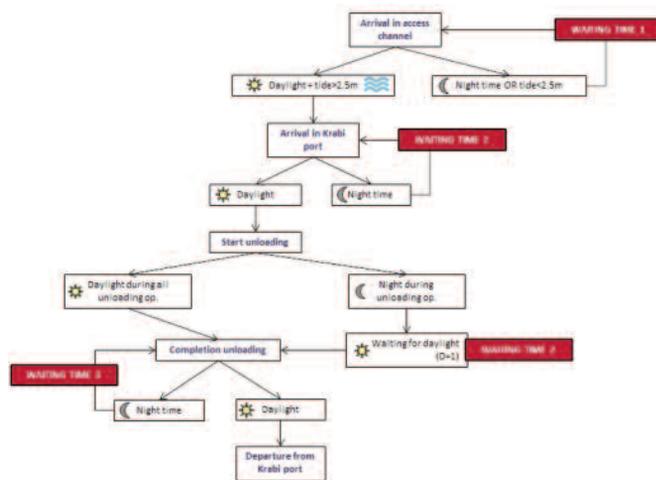
make the most of the water depth available: cargo intake will always be optimized. The benefit of loading more when possible is to increase the export capacity while reducing the fuel consumption. Moreover, by limiting the number of rotations and time spent for maneuvers, it increases the transshipment rate



which lead to generates savings on the long haul ocean freight.

Accessing a channel or a loading berth sometimes faces restrictions such as waiting for adequate tidal amplitude or waiting for specific hours during the day. For such project, LDPL uses ad-hoc program to evaluate the risk of waiting time at the critical zone and thus to design the most suitable solution.

From an operational point of view, in order to further optimize the transshipment and export, LDPL has developed a tool for an optimum interaction between transshipment and shipping operations. The shipping plan can make a provision to



position ocean-going vessels laycans when operational conditions (tides, waves, wind...) are favorable, so as to maximize the probability to have an OGV arriving at the best moment possible.

LDPL bases most of its analysis on a Monte Carlo simulation process, computing meaningful indicators over thousands of scenarios tested in order to accurately measure risks. LDPL can evaluate risk of congestion and demurrage at the terminal simulating ocean-going vessels arrivals and integrating the laycan schedule and the shipping plan.

### COMPANY PROFILE

LD Ports & Logistics is part of Louis Dreyfus Armateurs group, a French family business founded in 1851 which has continuously been a leader in the field of maritime bulk transportation and logistics.

LDPL is the specialized subsidiary focusing on Mining sector and Energy industry, proposing a wide range of integrated services in floating terminal and transportations, forging long term partnerships with leading industrial groups around the world.

LDPL has also acquired extensive experience in the development of shallow water solutions in order to “feed” their floating terminals.