

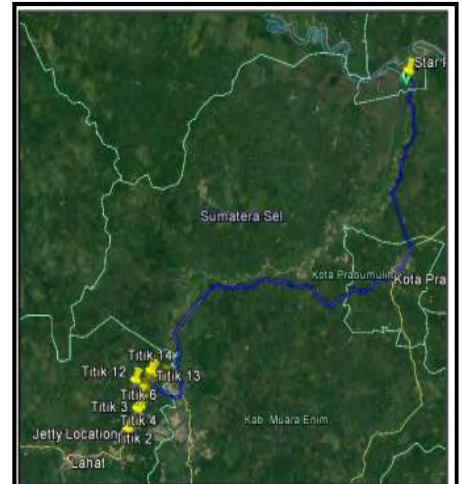
LEMATANG RIVER CHANNEL OPERATOR SOUTH OF SUMATERA – INDONESIA

PROJECT INFO MEMO

Prepared by



PT.PANAH PERAK MEGASARANA
"Reliable Partner for Power and Renewable Energy"



Document No:	REF:PPM-CO/00016/ES/09/2017
Rev.	00
Subject	PROJECT INFO MEMO DOCUMENT



Disclaimer

Information contained in this Project Info Memo (PIM) document is for reference purposes only.

The terms and conditions contained in this PIM document and instructions shall be made available as separate documents in details to the Project Partner's, Investor's and shall be considered and available upon the shareholder project agreement.

Purpose of Project Info Memo

The purpose of this Project Info Memo (PIM) is to provide general information as to the prospective Project's Partner's, Investor's (Private Finance and or Investor's/EPC Investor) on the assessment of the Project Lematang River Channel Operator as for the acquiring shareholding ownership in the Project consortium as to enable rapid development and leverage sufficient capital for the project implementation.

The Project has been developed on the basis that Private Finance and or Project Partner's, Investor's/EPC Investor will be available to fund in the development/construction project stage with minimum project risk in earlier stage. The requirements during the development stage especially in the project technical and legal/license/permits associated will take account to ensure the best value for the project budget cost and revenue.



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I. Company Introduction Summary

Panah Perak Megasarana and or PPM starts with a desire to create things of value and contributed for the energy and construction developing in Indonesia. **PPM** was founded in 2009 start in the property industrial services and in 2016 adjacent to the vision and mission to develop the power industry in Indonesia with specialities in the energy and constructions sector with desires to become as one of a principle player in the region's energy and construction sector in Indonesia.

We in **PPM** benefit from the Company founder's expertise in Indonesian operations, combines knowledge, expertise, collaboration and uphold and advocated of the fairness, accountability, honest, strive for excellence in everything we do, respect and strong passion about our goals in all of our operations because we believed in the power of people/team work, perseverant with high effort to achieved and attain of our Company main objectives :

1. Plan, execute and producing an integrated programme on development and implementation of the energy and construction projects with best value product and services to support the diversify and grow revenue streams and business objectives of our customer, project sponsor member's, stakeholders and the energy and construction sector policymakers in Indonesia with sustainability financial sounds and revenue.
2. Creativity by investigation, survey, research, design and bringing the most creative solutions to the energy challenges that faced by the Country for dynamism embracing of the energy and construction development sector in Indonesia.
3. Increase reliability of the development and operations especially in the power and renewable energy projects and construction services and compliance with the capitalize on the physical project facilities by improved energy usage per unit of production with lower error rates.

PPM common goals and or mission and objective is to become one of the key player of IPP and EPC company in Indonesia by offers power and renewable green energy and construction services with a most creative solutions that reduce the dependance on the fossil fuels by mitigates fuel cost risk and as well as to create a greener and cleaner environment in the power projects in solar, on-shore/off-shore wind, geo-thermal, tidal, bio-gas, bio-mass, small hydro and other renewable energy sources and to provide the Investors with strong, predictable equity and debt returns with current cash component and strong absolute returns, and on a risk-reward basis, superior returns.

PPM working with their project sponsor, investors and or the power off taker to make the process commercially viable for all concerned aspects and proven to reduce the energy expenses, improves operating efficiency, provide an attractive return on investment, and help to achieve the sustainability goals of greener and cleaner enviroment



II. Project Background

Starting increasing of the world coal consumption in early 2017 after the last 5 years of deterioration is inseparable from the rapid increase in world energy demand where coal is the second largest energy supplier after oil with 26% contribution. This role is expected to increase to 29% by 2030. While its contribution as a power plant is estimated to also increase to 46% by 2030. The increasing role of coal as a supplier of energy in the future will make this industry a huge attraction for investors included in Indonesia.

Lahat regency, South Sumatra, has a coal reserve of 2.71 billion tons while Muara Enim has 6.25 billion tons of coal reserves and about 28.52% of Indonesia's coal reserves of LRC-low rank coal are located in South Sumatra. By seeing the amount of the coal reserves above, the potential of provinces and state revenues from the coal mining sector is very large, assuming from the above inferred reserves, mineable is 70% then Government of Indonesia royalty income opportunity revenue from the mining sector are by utilizing the lematang river as the channel coal transportation as below follows :

Year Period	2020-2023	2024-2029	2030-Forward
Production (in tones)	16.800.000	22.100.000	28.000.000
COGS Coal (in US\$/ton)	\$ 15,00	\$ 15,00	\$ 15,00
Royalty (in %)	13,50%	13,50%	13,50%
State Income (in US\$)	\$ 34.020.000	\$ 44.752.500	\$ 56.700.000

This yet including with the advancement of the other supporting industry sectors which is could helps to utilized the potential of new jobs creation in the south of sumatera province for approximately 218,000 opportunities.

Currently in Lahat regency there are 12 private IUPs with a production of about 2,7 million tons per year carrying its coal with a dump truck, while the production of two IUPs owned by PT Tambang Batubara Bukit Asam (PTBA) and or state own company using trains and in Lahat there are still 38 coal IUPs that have not been produced in due to limited facilities or access to the coal transportation of loading coal to the collecting port at the mouth of the river Musi. To anticipate the density of vehicles on the highway from Lahat to Palembang, the district government plans to build a special road.

The construction of the special road is done by PT Servo Lintas Raya (PT SLR) but this special road encounters several obstacles, namely the need for 70 new bridges units due to the number of rivers crossed by this special road, another alternative is to develop the construction of railway 2 lines for the coal transportation but again this also faces obstacles for the land acquisition process which is owned by the citizens, and most of the people want all of their land to be sized and or cleared though not all the land affected by the land acquisition project and in addition to the high price of the land acquisition is the geotechnical issue of the some area whereas the road and rail track were sit and positioned in the swampy area,so in regards of the bearing capacity of the road and rail track there are standard minimum of weight passage which is indirectly impact to the maximum of tonnages and production throughput capacity over passing the road and rail track infrastructures.



Example for the Servo road, the road designed with capacity of 12 mtpa but the actual capacity as only could achieved 2 to 2,5 mtpa and or approximately maximum 170,000 to 208,000 tones/month.



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III. Project Brief

PT.Panah Perak Megasarana has conducted a river dredging feasibility study in the upstream of the lematang river, lahat regency up to the downstream of the lematang river in muara enim regency of south sumatera province to the river mouth of the musu river-sungai rotan in november 2015 to september 2016 and subsequently currently undergoing for apply for a permit to dredge the lematang river for the waterways mode transportation for the river coal barging transportation.

The objective was by improvement of the river navigability in the lematang river could provide most cost effective barging for the coal mine users from lahat regency to transport/barging of their coal thru lematang river to the musu river.

Beside cost factor consideration, coal transportation by road is merely more expensive, double handling process and often not allowed on the public roads due to the safety factor risks and in the meanwhile the rail way its being utilized and fully occupied with capacity limitation allowable and therefore investments issued also appear to increased the rail road capacity due to some issue in the land acquisition process and also the soil condition (e.g swamp area – geotech issue) whereas this indirectly could impact to the sequences of the sustainability of production schedule of the coal mining company also for the transportation cost for frequent maintenance and road improvement by the road operator.



Following on that situation above by apply the lematang river and used it as the waterways transportation is one of the great potential step that available because due to the current limitations mode of the existing transportation mode above and furthermore the river waterways transportation is the more cost effective barging cost transportation for coal and as well for the other commodities in the world.

PT.Panah Perak Megasarana with their Co.partner associated and affiliated with the Government entity will operated the lematang river with channel operation concepts including the tug and barge of coal transportation from the upstream of the lematang river in desa merapi,lahat regency 235 km to the rotan river in desa rantau bayur then subsequently to the musu river – bangka straits and or discharges and plan for stockpiling the coal in patra tani coal terminal ,muara belida,muara enim regency designed with could storage the coal up to :

Design Capacity	tph	3.000
Belt Conveyor Design (BW)	mm	1800
Coal Barge Unloading	Kw	450
Drive Unit (TT1-Surge Bin)	Kw	315
Drive Unit (TT2)	Kw	315
Stacker/Redaimer	Kw	2 x 250
Operation hour	hour/year	8.640
Availability	%	88%
Equipment Other Factor	%	94%
Utilization	%	88%
% of line for the area (allocation work load)	%	6%
Coal Barge Unloading TT1 (conveyor capacity)	tph	2.640
% of Utilization after factor allocation work load	%	82%
Planned Production Rate	tph	2.640
Planned % Reject	%	2%
Planned % Line Efficiency	%	80%
Adjusted Production Rate	tph	2.076
Utilization Hour/Year	hour/year	6.932
Coal Terminal Production/Year	tones/year	14.388.560

PT.Panah Perak Megasarana with their Co.partner associated and South of Sumatera Government especially hope that with this river waterways transportation option in the Lematang river to the musu river can support for the developing of the economic and industrial sectors in South Sumatera province and specifically in Lahat and Muara Enim Regency.



IV. Project Executive Study

The feasibility study, technical assesment and site investigation is conducted and compiled by the proponent himself with the following information :

Company Name : **PT.Panah Perak Megasarana**
Company Address : The Garden Centre,3-21,KKO Cilandak,South of Jakarta- Indonesia
Project Location : Sungai Lematang,Lahat and Muara Enim District
Business Fields : Power Plant and Energy EPC Engineering Services

Part of the studies also to analysis the deliberate ships dimensions with the following particular tug and ships barge specification :

Barges Qty	Set	32
Barges+Tug Power Capacity	Horse Power (HP)	2.000
Barges Fuel Consumption	Liter/HP	0,15
Speed Tug & Barges	Knot	4
	Km/hour	7
River Lenght	NM	127
	Km	235
Day/Year	Day	360
National Holiday & Others	Day	10
Effective Operation/Day	Day	350
Sailing Time	Day/Trip	2,6
	Hours/Trip	64
Effective Barge Cycle/Year	Trip	132
Barge Design (q)	ton	4.000
Barge/Capacity	Tpa	529.021
Coal Production	Tpa	16.800.000

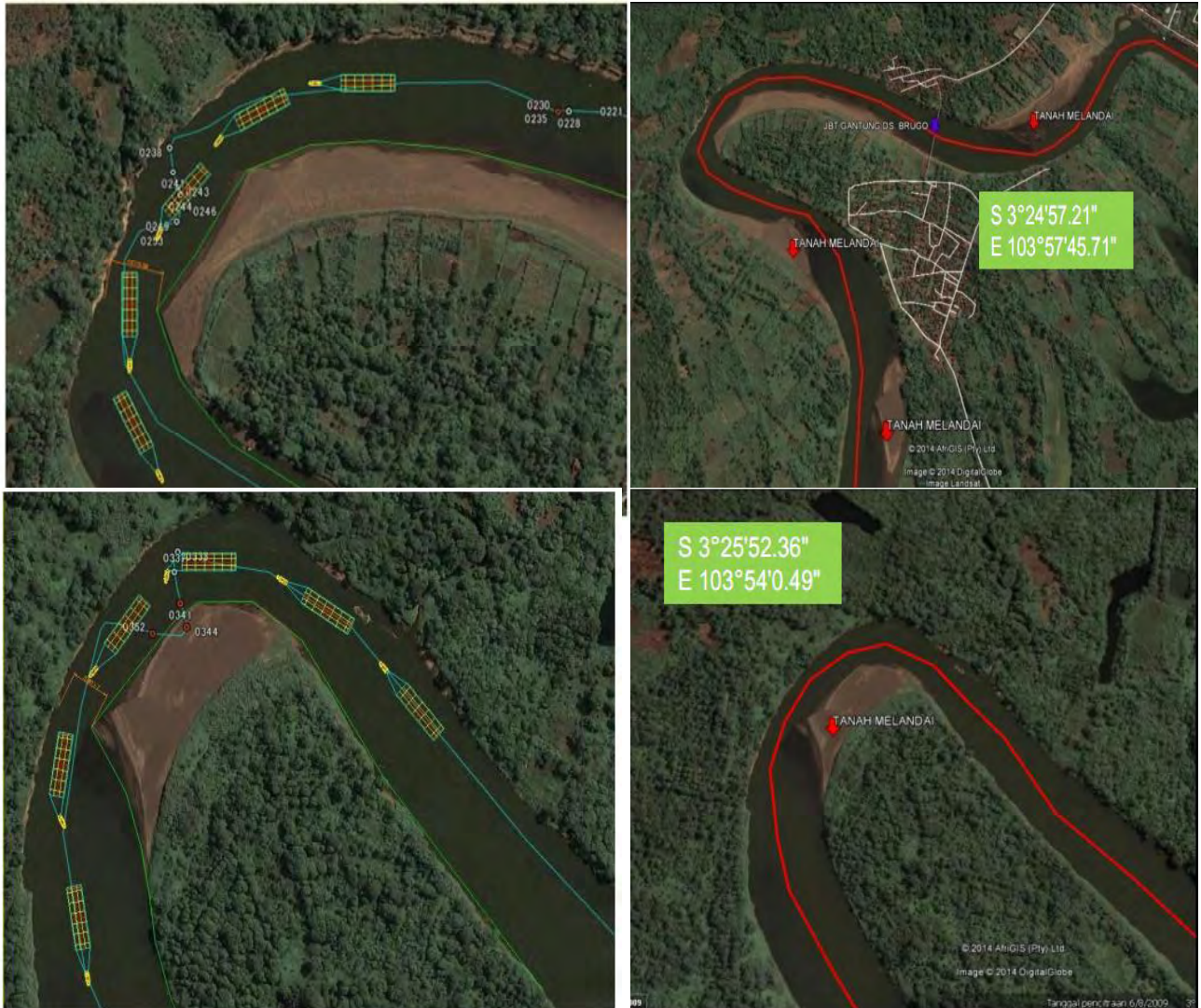
**refer to prodution sequences cycle 2020 to 2023*

And routability production rate limitations of the river for coal barging due to :

1. River Sedimentation
2. Water Depth Availability
3. Width and Angle of the Bends
4. Flow Velocity of the River

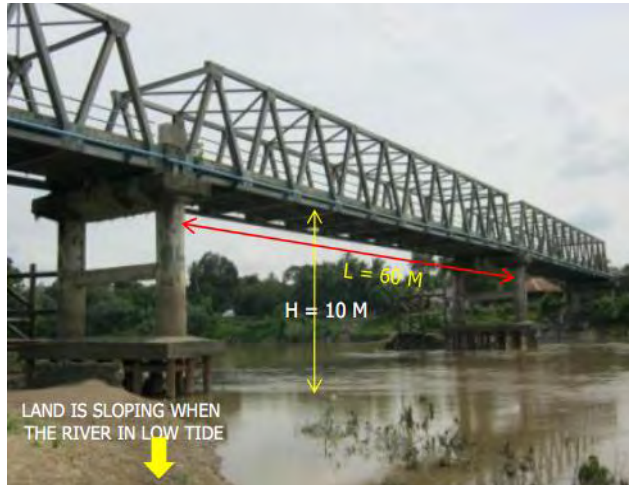


By identify and examined major aspect above, the objective of the lematang river - musi river for coal barging transportation become feasible.



Spot#6		A	B	C
P	m	68	84	105
L1	m	28	36	29
L2	m	22	32	27
h	m	4	4	4
V	m3	6.800	11.424	11.760

Example 1 spot artificial to be dredge at Lematang River and Bridge at Benakat



Bridge	Location	Elevation Water Surface (LWL) (m)	Depth of River (LWL) (m)	Wide of River (m)	Volume Dredge (m3)
Benakat	Km 235,1	± 10	± 4	105	15.120

1. River Sedimentation

Sedimentation rate in the Upstream of Lematang River to the Downstream of Muara Lematang at Musi River being identify along 235 km lenght with the following coordinate :

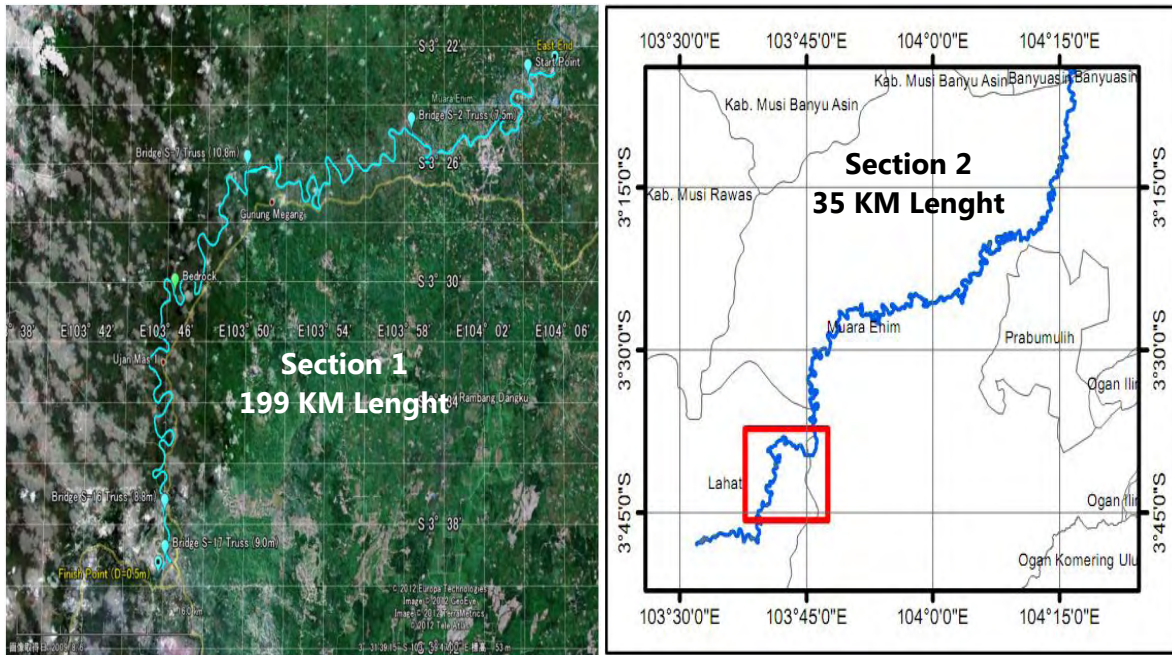
Start point / Rantau Bayur, Tebing Abang

- Latitude : S 3 – 23 – 10.1
- Longitude : E 104 – 04 – 18.1

Finish point / Merapi, Telatang

- Latitude : S 3 – 39 – 44.0
- Longitude : E 103 – 45 – 45.0

With total of sedimentation volume to be dredging : 12,457,680 m3



2. Water Depth Availability

Water availability is estimated by low flow analysis is to estimate the water availability in the river, which is known as dependable flow. Water availability analysis requires reliable daily or monthly discharge data in excess of 10 years and for better accuracy, longer data is needed. Data should be obtained directly from measurements at Automatic Water Level Recorder (AWLR) stations in rivers in the vicinity or directly flowing pass the study site.

Refer to the three (3) AWLR station river, water potential discharges calculation up to year 2035 as below follows :

- **Lebak Budi Sta No : 01-074-00-27 : 101,28 m³/sec (AVERAGE)**
Lebak Budi Sta is located southwest of the city Muara Enim in Lebak Budi village, Merapi district, Lahat regency and is geographically located at S 03° 46' 53" and E 103° 38' 31".
- **Pinang Belarik Sta No.01-074-00-40 : 159,00 m³/sec (AVERAGE)**
Pinang Belarik Sta is located north of the city Muara Enim in Pinang Belarik, Kikim district, Lahat regency and is geographically located at S 03° 33' 39" and E 103° 45' 32".
- **Sungai Rotan Sta No.01-074-00-02 : 378,00 m³/sec (AVERAGE)**
Sungai Rotan Sta is located north of the city Prabumulih in Sungai Rotan village, Muara Enim regency and is geographically located at S 03° 03' 43" and E 104° 09' 59".

And or from the three (3) AWLR river station above water availability analysis mean level average show in the level of 159 m³/sec discharge capacity and or the resulted from three (3) AWLR river station showing 28% higher than formula computation results.



Refer to the three (3) AWLR station river, water potential discharges calculation up to year 2035 as below follows :

From the three (3) AWLR station above the flow duration curve starts at 750 m³/sec then drops quickly until probability level of 10%, then flattens until 95% and finally drops down at 100%.

3. Height, Width and Angle of the Bends

The Lematang River capacity is limited by bend radii and water depth due to sedimentation during the dry season especially to achieve the minimum water level surface along 235 km length of river navigation channel.

There are 44 superficial spots being identified required to be dredged to overcome the current limitation above include 18 bridge point location that need to be dredged also, for the river bed and the width of the river (existingly) to achieve the best practice of safety minimum elevation water surface for barge navigation.

- Section 1, sedimentation volume : 811,138 m³
- Section 2, sedimentation volume : 391,688 m³
- Bridges in Section 1 & 2, sedimentation volume : 435,528 m³

Total sedimentation volume that need to be dredged include swell factor and sf : 2,103,647 m³

4. Flow Velocity of the River

HEC-RAS is capable of performing water surface profile calculations for steady gradually varied flow for a full network of natural and constructed channels. The system can handle a full network of channels, a dendritic system, or a single river reach. The steady flow component is capable of modeling subcritical, supercritical, and mixed flow regime water surface profiles. The basic computational procedure is based on the solution of the one dimensional energy equation. Energy losses are evaluated by friction (Manning's equation) and contraction/expansion (coefficient multiplied by the change in velocity head). The momentum equation is utilized in situations where the water surface profile is rapidly varied. These situations include mixed flow regime calculations (i.e. hydraulic jumps), hydraulics of bridges, and evaluating profiles at river confluences (stream junctions).

HEC-RAS tests the applicability of subdivision of roughness within the main channel portion of a cross section, and the program will compute a single composite n value for the entire main channel. From the modelling in the program include the analysis and results portion from 3 (three) AWLR-Automatic Water Level Recording River Station in the Lematang River, The program could determine and calculate the potential water flow velocity in the Lematang River :



$$V = 72 \left(\frac{H}{L} \right)^{0.6}$$

Where

V : flow velocity (km/hour)

H : height difference between the remotest part of the watershed and the point of observation/calculation (km)

L : river length (km)

$$V = 72 (1,75/35)^{0.6} = 11,93 \text{ km/hour}$$

Associated study and investigation has been cater for the following 4 major aspects aboved, and we could then identify and justify the total dredging volume for the :

Dredging work volumes for Initial/Post Dredging for 235 km lenght :

$$2,103,647 + 9,092,640 + 3,365,040 = 14,561,327 \text{ m}^3.$$

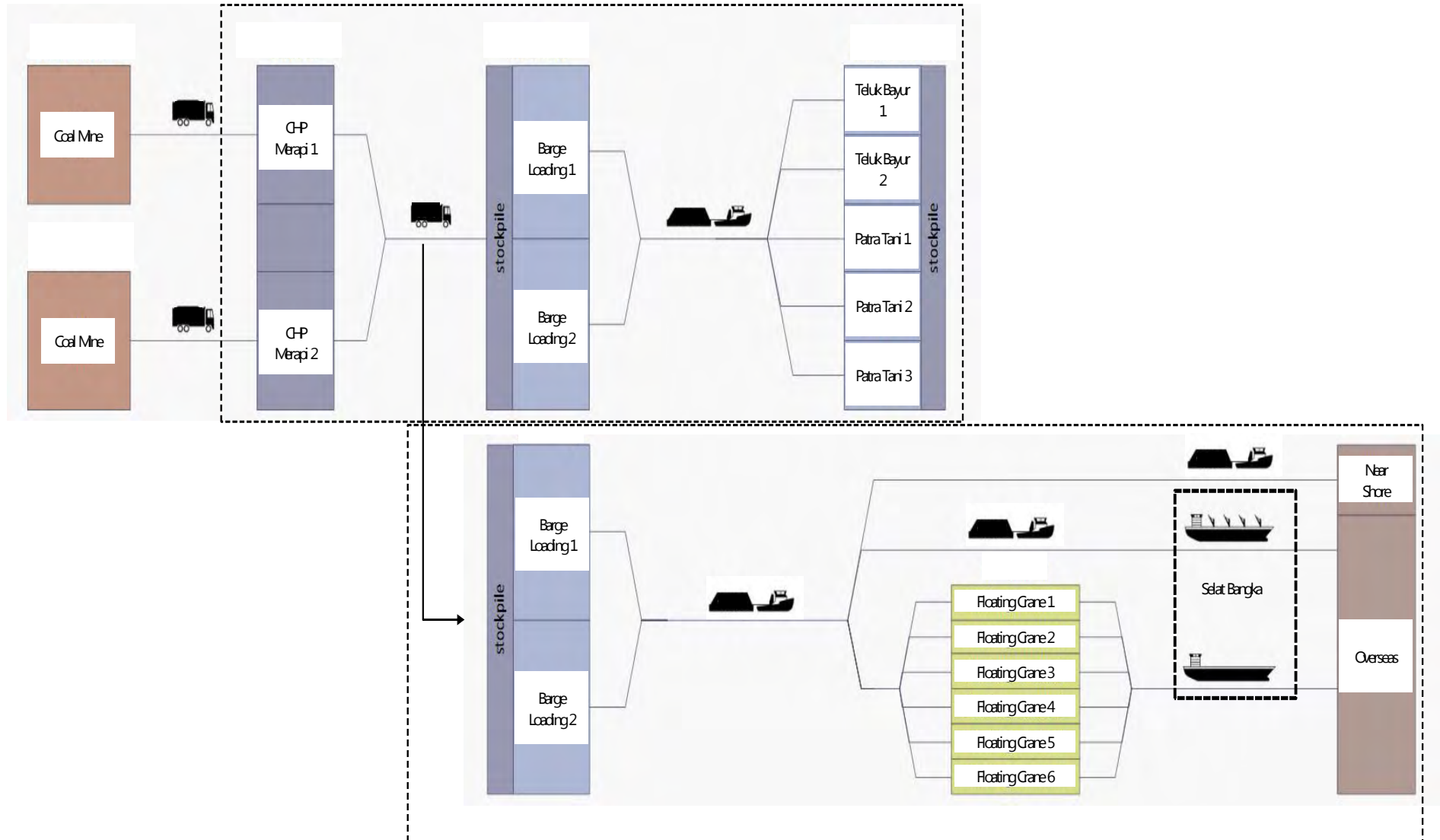
Dredging work volume for Maintenance Dredging by Yearly basis for 235 km lenght:

$$723,908 + 54,313 \text{ m}^3/\text{year} = 778,221 \text{ m}^3/\text{year}.$$

The channel canalization studies with dredging works of the Upstream Lematang River to Downstream Lematang River in the Muara Lematang/Rotan River – Musi River for 235 km lenght design for sailing purposed of coal barge transportation design of 4,000 DWT.

With assumption from 28 million of coal design capacity to be transport thru to the Lematang river x 60% AF = 16,800,000 tones/year for 2 year 1st round up channel operation and after 2 years operation increased to 22,100,000 and forward to 5 years operation for 28,000,000 tones/year.

Traffic at the river 16,800,000 : 136 Trip : 2,64 Days/Trip : 4,000 Tones/Trip : 12 Barge/Day and or each barge distance to other barges approximately 20 km along channel river navigation 235 km from Upstream Lematang River to Downstream Muara Lematang – Musi River which is this very safe and reliable.





5. Schedules of Project and Work Stage

The construction dredging production schedule shown as below:

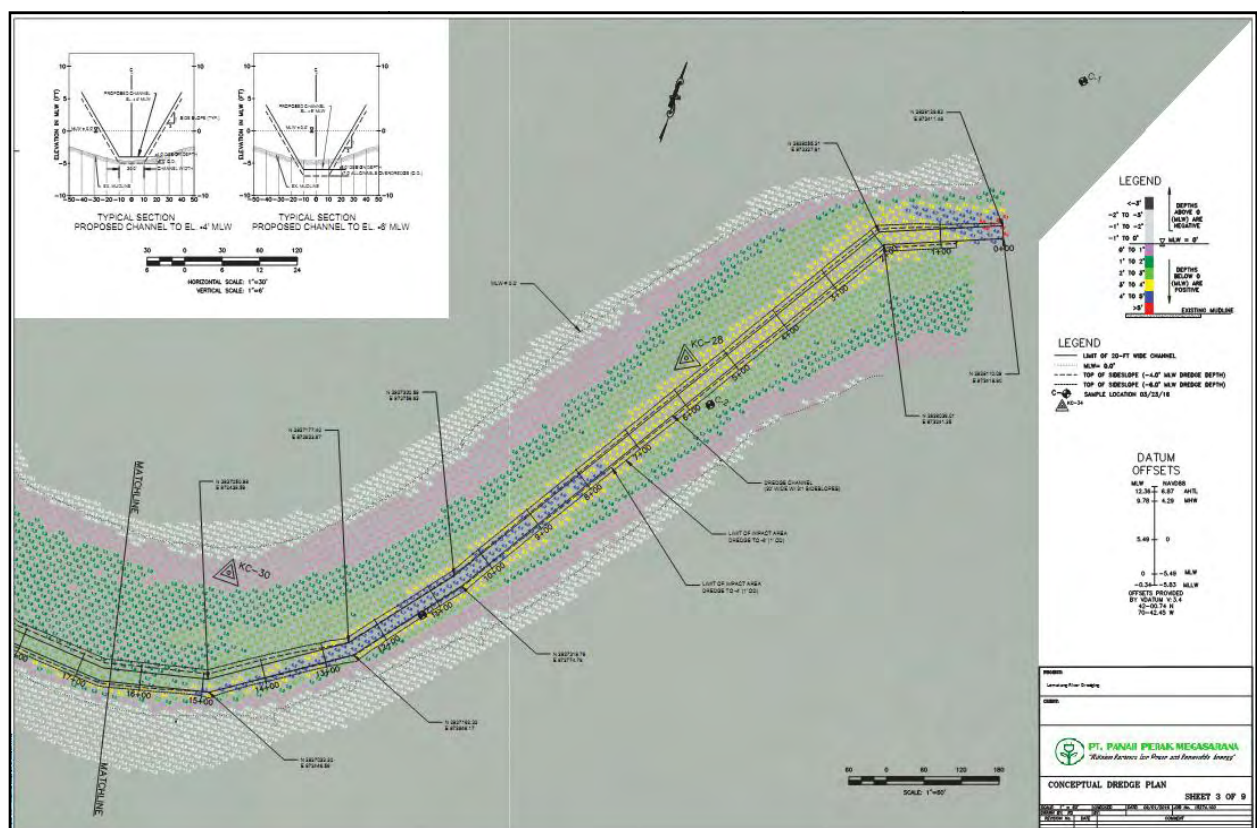
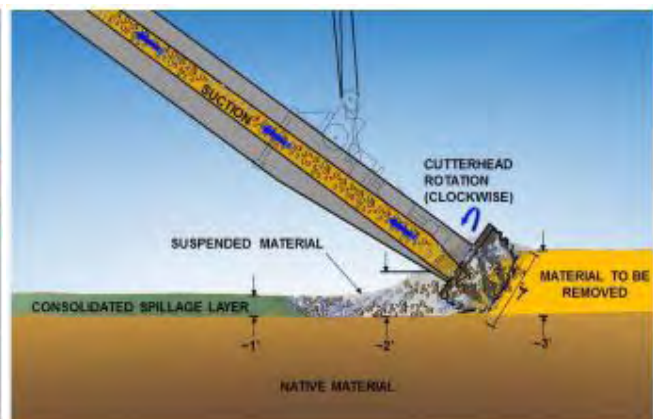
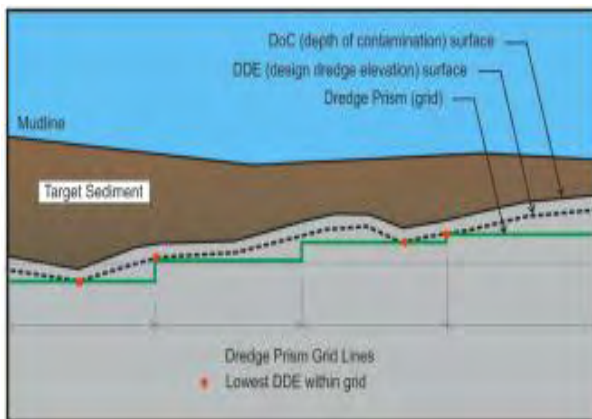
No	Description		2017				2018												2019											
			Q1	Q2	Q3	Q4	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Capital Dredging (14,561,321 m ³)																														
1	Project Management	Completed																												
2	Concept Plan Development/IS	Completed																												
3	Consent/Hoget																													
4	Final Concept Plan																													
5	Permit's Application																													
6	Permit's Approval																													
7	Environmental Assesment/ANDAL																													
8	Pre-Dredging Construction I/M/O																													
9	Dredging Contractor Mobilization Activities																													
10	Dredging Area Head Set Up																													
11	Process Facility Mobilization Activities																													
12	Volts Commences																													
13	Final Completion & Commissioning																													
14	Start Operation (Dredging & Port Navigation)																													
15	Channel Operation Stage																													
Online Maintenance Dredging, Kaly Bas (7,821 m ³)																														

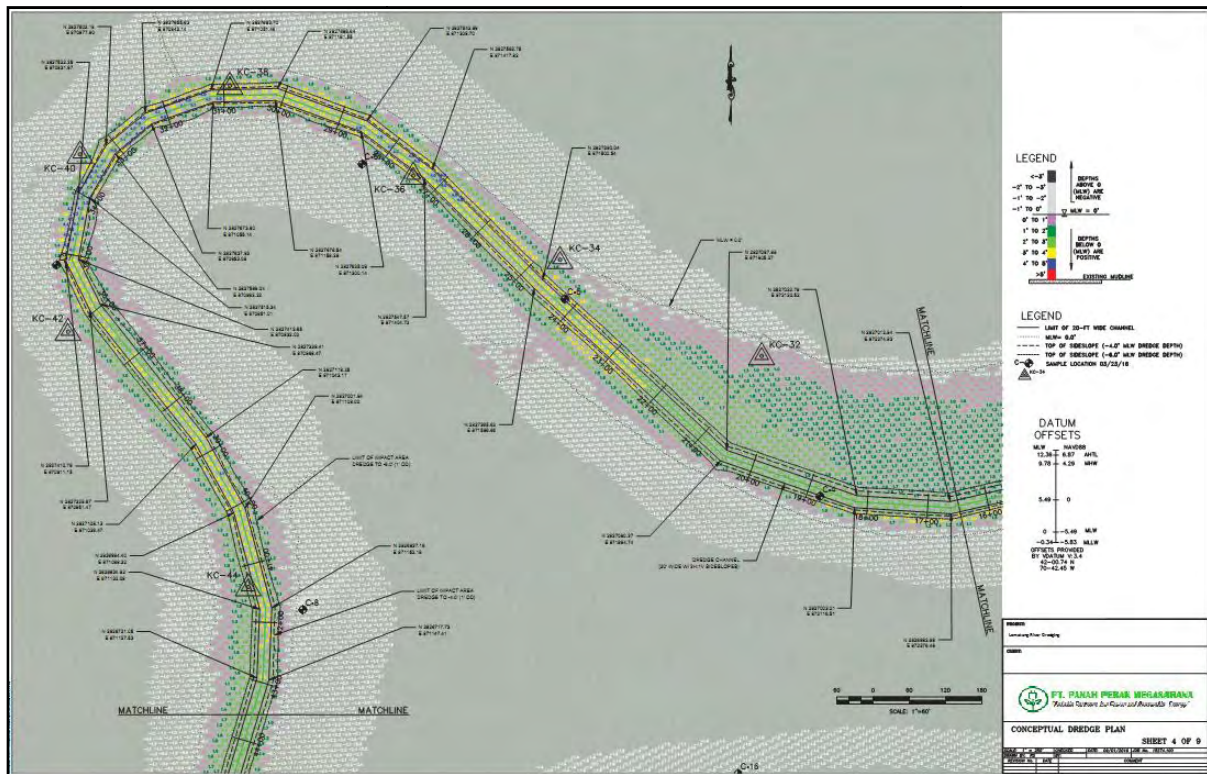
The dredging production schedule identifying the *in situ* volumes of material targeted for removal for each 4-week period, presented in below :

No	4 - Week Period	In situ Volume of Material Targeted for Removal (Cum)
1	Weeks 1 - 4	1.680.000
2	Weeks 4 - 8	1.713.600
3	Weeks 9 - 12	1.773.576
4	Weeks 13 - 16	1.862.255
5	Weeks 17 - 20	1.992.613
6	Weeks 21 - 24	1.792.513
7	Weeks 25 - 28	1.702.888
8	Weeks 28 - 31	1.106.877
9	Weeks 31 - 35	937.006

This table is based on the study and concept equipment dredge selected issued to the dredging study for budget and planning purposes with the following assumption (q) capacity and fleet combination :

1. Mechanical bucket/backhoe dredge : $6,000 \text{ m}^3/\text{day} \times 6 \text{ Unit} = 36,000 \text{ m}^3/\text{day}$
2. Hydraulic suction cutter head dredge : $8,000 \text{ m}^3/\text{day} \times 3 \text{ Unit} = 24,000 \text{ m}^3/\text{day}$
3. Barges sediment transporation and storages : 36 Unit
4. Working location/dredge unit set : 3 work location/day
 - 1 mechanical bucket/backhoe dredge
 - 1 unit of hydraulic suction cutter head dredge
 - 12 unit of barges sediment transporation and storages
5. Working coverage : 82 Km lenght of works/dredge unit set.





The volumes in the table do not include volumes associated with any additional dredging passes needed to achieve the requirements of the residual standard, those volumes are unknown at this time but will be included in the volumes to be reported in the weekly, monthly, and annual productivity reports for the Dredging Operations. It is estimated that the total volume targeted for removal during the capital dredging works will meet or exceed the target for sediment processing of 14,561,327 m³ and furthermore in addition, the volumes in the table represent an estimate of the dredged material targeted for removal in each 4-week period and the actual amount removed may be more or less depending on the field conditions.

6. Project Cost and Capital Structures

Channel Fee Cost US\$/ton : US\$ 7,23/tones

Dredging Cost : US\$ 4,9/t/m³

Dredge Volume : 778,221 m³/year

Interest Rate : 15%

Income Tax : 25%

Working Capital Cost : **US\$ 80,350,502** with :

- Dredging Working Capital : US\$ 71,350,502
- Technical FS, Site Survey & Other's : US\$ 2,500,000
- AMDAL Report : US\$ 1,200,000
- License & Permits : US\$ 1,500,000
- Site Establishments : US\$ 3,800,000



Capital Structures		
Loan/Depreciable	%	70%
Equity	%	30%
Bank Interest	%/Year	15%
Inflation Rate	Year	4,0%

Project Equity IRR	%	50,09%
Net Present Value-NPV	US\$	\$ 296.630.443
Weighted Average Cost of Capital (WACC)	%	12,1%
Future Value	US\$	\$ 394.517.850
Accumulated Net Cash to Equity	US\$	\$ 1.295.540.988

V. Project Summary and Conclusion

The Lematang River is the major river flowing on the southern border the project site. The river originates from the mountains of Bukit Barisan range about 2,000 to 3,000 m above mean sea level. Lematang River is itself a tributary of the Musi River which flows to the sea at the strait of Bangka. Lematang River has several tributaries, i.e. Air Enim in the south and Air Lintang in the southwest. The tributaries flows pass the forests in the mountains, hills, paddy fields and plantations in the lower plains before joining Musi River.

Coal transportation by river waterways thru lematang river to musu river is generally cheaper per tonne per kilometre than any land mode transportation and or lower energy cost per tonne transported :

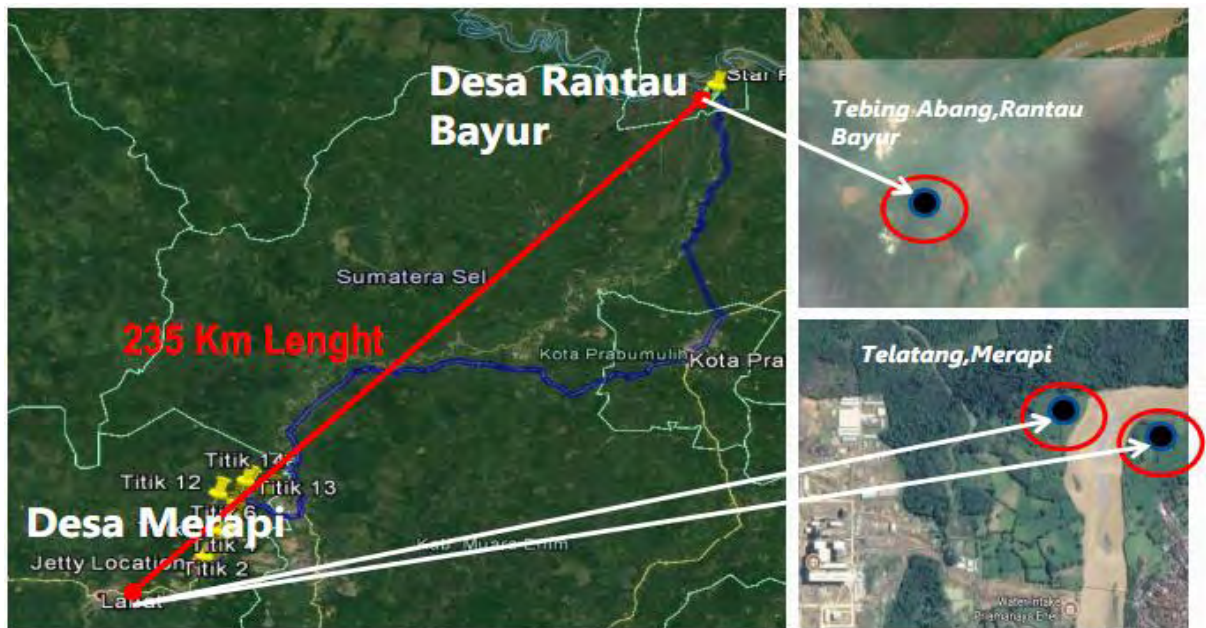
No	Transport Mode	Costs (in US\$/ton/km)
1	Truck	US\$ 0,092
2	Barge	US\$ 0,030
3	Railway	US\$ 0,063

**The cost barge above already included with the dredging cost*

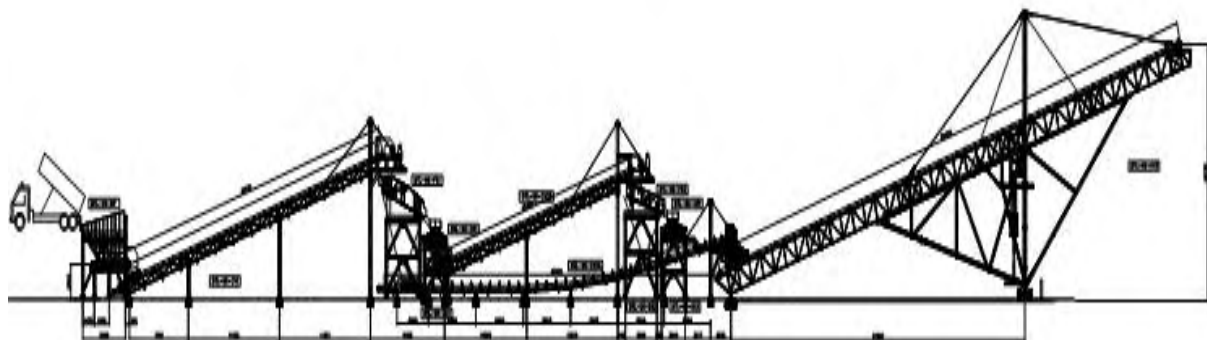
The Coal inloading and unloading port terminal will be located into 2 location, 1 in desa Merapi for coal inloading facility with design capacity of 3,000 tph and 1 location in Patra Tani coal port terminal for coal unloading/inloading facility (transfer point prior to the MV-monther vessel in bangka strait).

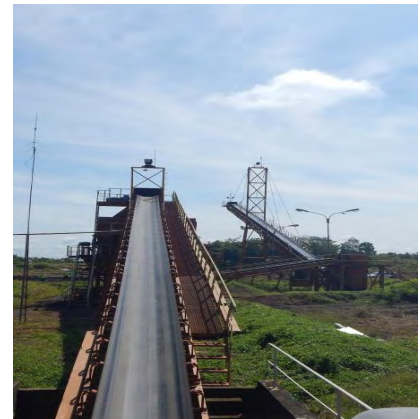
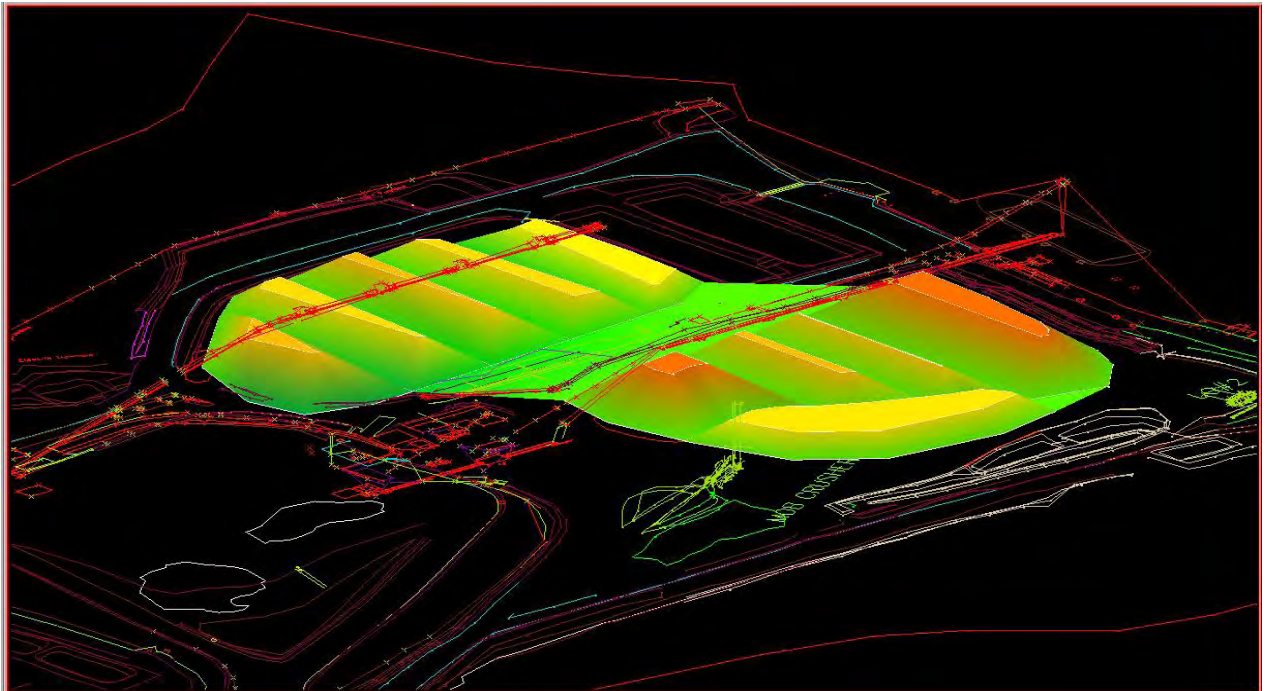


There are plan to develop for other coal discharge facility at rantau bayur but this will be discussed by further and required additional study for the infrastructures.



Coal inloading facility designed in desa merapi,telatang-lahat regency with capacity designed 3,000 tph.





Infrastructure and maintenance costs of the river waterways by barges was lower than for railway transportation method furthermore new track of rail train will be require for new side of land purchased from the local people and therefore as common understanding as to build a new track rail train will be more costly than upgrading the existing track and therefore railway is limited by the land geological structure (swamp area etc).

The average construction cost is US\$ 338,445/km in 1972 and if we assume the inflation in Indonesia 5%/year, it is estimates the cost is approximately higher 200% in 2011 which is US\$ 1,06 Million per Kilometres. The Railroad from Muara Enim to Muara Abab (Barge Loading Point Area) is ± 90 Kilometres which cost around US\$ 125 Million, including the assumption of 30% miscellaneous cost factor such us environment and community.

With assumption for 28 million tones/year of output production, The total trainset combination as the above concludes that the total capital cost for the overland transportation will be the construction cost for the railroad plus the trainset combination which are US\$ 125 and US\$ 56 Million respectively, the total of the capital cost approximately **US\$ 181 Million** as table below as following :



Description	1 Trainset Combination	7 Trainset to reach 28 million tones
Locomotives w/ 3,000 Horse Power	2	14
Wagons (50 tons/wagon)	60	420
Speed	60 km/h	60 km/h
No Hours return trip for 90 km x2 = 180 km	3 h	21 h
Estimated Loading/Unloading time	3 h	21 h
No of return trip in a day (24 work hours)	4	28
Tons/trainset	3.000	21.000
Tons/trainset/day	12.000	84.000
Tons/trainset/year (365 days)	4.380.000	30.660.000

*Sources : Putranto, 1997; UPRR Engineer,2008; Wikianswer,2011

Description	1 Trainset Combination	Trainset to reach 28 mtpa	Estimated Cost/Unit	Total Cost
Locomotives w/ 3,000 HP	2	14	\$ 2.500.000	\$ 35.000.000
Wagons (50 tons/wagon)	60	420	\$ 50.000	\$ 21.000.000
Description	UM	Lenght of Track	Estimated Cost/Km's	Total Cost
Railtrack	1	90	\$ 1.068.500	\$ 96.165.000
Environment/Community (CF)	1	90	\$ 320.550	\$ 28.849.500
Total				\$ 181.014.500

Trainset combination & capital cost to reach 28 million tons/year

Further from the explanation above advantages of transportation by Lematang River :

1. Lower transport costs since water transport is commonly cheaper ton/km than any modes of land transport.
2. Lower gains on energy costs and emissions.
3. Infrastructure (CAPEX) and maintenance costs are possibly efficient than those of rail,road and conveyor.
4. Effects to the environment ought to be less than building a new alignment.

Meanwhile there are also some disadvantages :

1. The factual distance the coal must be transported by river may be significant caused by the twisting alignment of rivers in South Sumatra.
2. The slow speed of transport by river, worsened by the winding alignment would result in more time for transit, compared to land modes of transport. Nevertheless, since coal is non-vulnerable, the cost advantages possibly exceed this issue.

The Lematang river flow velocity 11,93 km/hour and or > (aboved) than design speed of assist tug barge design 4,000 DWT which is 4 Knot and or 7,2 km/hour and with sufficients of water



lematang river discharges capacity (Q)114 m³/sec – 159 m³/sec is **resulted option to unlock greater potential to expanding the river waterways transportation thru to the Lematang river – Musi river become feasible and reliable which is generally more economic, reliable and safe than any other land transportation mode and also lower energy cost transported.**

The cost associated for the Channel Operation of Coal Transportation by Lematang River quoted as below follows :

- Channel Cost (Dredging and Barging Cost) : **US\$ 7,23/ton** and or **Rp.400/ton/km.**
- Coal Barge Inloading : **US\$ 0,82/ton** including Crushing, Stockpile Management and Weigh Bridge.
- Coal Quality Lab Services : **US\$ 0,1/ton** (if required by Geoservices/Sucofindo).



VI. Company Foreword

One of the key factor for the successful project development of Lematang River Channel Operation is the development and preparation has been the project readiness to adapt to the next phase of project development stage and or pre-construction stage due to all the key factor of the project requirements like wise technical studies being completed and now undergoing for permit's and license's associated submission works.

These has taken into account could minimized and reduced the potential of the exploded risk to the Investor for their invesment due to unproponent project development failure caused by the un-completeness of the project associated report and investigation and legal aspect.

We in PPM are committed to securing the best value and to safeguard the project from the potential uprising and unpredictable change in the project by bring and taking place the robust value of project views,plan,design,build,finance,construct,operation and maintain integration aspect accountability to achieves the sustainable and provide the Investors with strong,predictable equity and debt returns with current cash component and strong absolute returns,and on a risk-reward basis,superior returns.

With our expertise and competence we bring our creativity by investigation, survey, research,design and bringing the most creative solutions to the project which could embracing effective risk control through the interaction of design, construction method, and capital and operation costs assessed in whole life terms of the Lematang River Channel Operation Project in South of Sumatera – Indonesia.

Your contribution to this Lematang River Channel Operation Project development is appreciated greatly,