

Investment program 2015

2015 Investment program is structured in 3 sections, based on objectives and projects magnitude.

Total investments value allocated for **2015** is **111.599.500 USD**, according below table:

| | Budget 2015 |
|---|------------------------|
| Petromidia, from which: | 105.664.790 USD |
| Development | 5.835.824 USD |
| Operational Support | 643.424 USD |
| Compliance | 21.702.193 USD |
| Capital maintenance | 77.483.349 USD |
| Vega, from which: | 5.049.138 USD |
| Development | 885.574 USD |
| Compliance | 2.868.073 USD |
| Capital maintenance | 2.181.065 USD |
| Total investments Rompetrol Refining | 111.599.500 USD |

Compliance

This category includes compulsory investments required by environmental and safety regulations:

➤ **V26/2 Tank Rehabilitation** tank rehabilitation was taken into consideration for capital repairs, being part of General Master Plan Program which have the objective to maintain to an optimal value the storage capacity for refinery products and align to safety requirements. The necessity for tank rehabilitation was needed due to the followings:

- Alignment to the requirements imposed by legislation (GD 893/2005 and GD 568/2001) on environmental protection (reduction of emissions of volatile organic compounds). Failure to comply with the requirements of GD 893 may lead to withdrawal of the Refinery operating permit if the requirement is broken repeatedly. Refinery authorization shall be valid again only until the facility is implemented.
- Tank V26/2 reintroduction in normal operation, upgraded, increasing the storage capacity of finished gasoline.
- Reduce with up to 95% the emissions due to the new internal floating roof.

➤ **Expire authorization ISCIR for static equipments (ISCIR 2015)**

Project consists in aligning to legislation requirements in terms of safety functionality of the refinery equipments. In July 2010 occurred new modifications of the existing legislation, namely technical prescriptions C4, C6 and C10, 2010 edition introduced the obligation to prepare Examination, Checks and Investigation (EVI) Programs for all

equipment and pressurized pipes older than 12÷18 years in order to perform Technical Checks in Use for Examinations with Technical Character (VTU-IECT).

As of 2004 the Beneficiary was required to prepare Technical Documentation for each pipe and to authorize all pressurized pipes owned. According to Technical prescriptions C6 and C10, old pipes should have been authorized either after performing a technical expertise or based on a technical documentation prepared by an ISCIR authorized company.

- Running with the refinery units in safety conditions according to legislation in force, as a result of detailed verifications which will be performed during this evaluation program which will have as a result the technical evaluation of the equipment after specified years of service, as well as repair or elimination of the faults which will appear after the checks;
- Obtaining the functioning authorization for the pressurized equipment, pipes and lifting equipment as per Technical Prescriptions

➤ **Safety Package in Petromidia Platform**

Health and Safety signalization is mandatory according to Romanian safety legislation.

With this project, according to Romanian safety law will follow:

- Install life line system on the loading ramp (auto and railway). Life line system must be complete according to contracted h&s specialists for equipment delivery (design, harness, ropes, shock absorber, rescue intervention equipment, training, tests). Lifeline vertical system (design, harness, ropes, shock absorber, rescue intervention equipment, training, tests – example BRO Railok).
- Procure 8 mobile platforms for each unit to facilitate the access at height;
- Assessment and implement anchoring points systems for working at height (RPP);
- Assessment and implementation for Lock Out Tag Out Implementation System. Contact an external Company for make the assessment for implement LOTO system on the principal lines at the limit of the units and for a critical equipments in Rompetrol Refinery;
- Risk assessment revision after the implementation of new equipment in the areas listed.

Comply with Law in force:

- Law for OHS 319 from 14th of July 2006;
- GD 1425/2006 for applying the Law for OHS 319;
- GD 955/2010 to complete the GD 1425/2006 for applying the Law for OHS 319;
- OHSAS 18001 standard, by assuring protection for personnel referring to the risk existing at the workplace, especially in working at high.
- Implementation of the specific measures specified in the Prevention and protection plan.

➤ **Increase security level in Petromidia Platform**

- Securing the perimeter of Rompetrol Rafinare in North, West, South and East side, including IPPA and Rompetrol Gas - Reduce the threat of penetration and the associated risks such as theft, vandalism destructions. .
- Securing the perimeter of Rompetrol Petrochemicals.
- Comply with GD 301/2012 for Law 333/2003.
- Increase the level of safety and discipline inside the protected perimeters.

- Securing the CFU-2 gates, IPPA-2 gates, Rompetrol Gas-1 gate, CET-1 gate, Parking gate 2-2 gates and Parking gate 3-2 gates.

Development

This category includes projects for static and dynamic equipment revamp and modernization, in order to keep in good condition for safe operation of the Refineries units.

From this category, a very important place is held by projects from „Storage and logistics“ area, which, consecutive to processing capacity of the refinery increasing to 5mil.tones/year after „2010 Package“ implementation, will solve refinery problems regarding storage possibilities, blending and deliveries of the products in order to get a maximum efficiency by a rational use of all components. Projects from this category:

➤ Diesel delivery optimization for three direction simultaneously

Starting with 2013, product quantities reached 2.3 millions of tons per year but products diversity will increase, according to Refinery strategic business plan. These aspects will surely affect Berth 9 capacities and will cause delays at diesel loaded ships with effect on Refinery income by paying penalties due to demurrages. In the actual situation, must be highlighted that, due to existing piping system, deliveries can be assured only by two paths simultaneously

Within project implementation, following benefits will be assured increased delivery flexibility by increasing diesel evacuation capacity through different delivery paths simultaneously.

Increasing the loading rate to Berth 9.

Avoid further diesel storage bottlenecks within increased product evacuation facilities.

➤ Rehabilitation of IPPA facilities

Project objective is to have auto truck loading terminal at its design capacity (35,000 tons/month) and avoid risk of terminal shutdown due to poor operating condition regarding loading software, automation system and metering SKIDs;

- Decrease/ minimize difference between quantity loaded in PEM and the one received by DWS / customers from current range of 0.5 – 0.7% m/m (which is outside the range accepted by Authorities, respectively $\pm 0.5\%$) to a value of $\pm 0.25\%$ m/m.
- Prepare IPPA terminal infrastructure and field equipment for integration with Group Terminal Automation System (TAS).

Within project implementation, following benefits can be highlighted:

- Improve customer satisfaction by minimizing loading differences on deliveries from IPPA terminal to a value of $\pm 0.25\%$ m/m
- Fulfill the Trading forecasted sales plan by ensuring optimum operating conditions for truck terminal and complying with delivery requirements;
- Reduce the risk of terminal downtime by modernizing terminal automation infrastructure as well as terminal applications:
 - Comply with TRG audit findings 2011 and agreed action plan;
 - Decrease the maintenance costs with 70k USD/year.

➤ Increasing diesel loading capacity on RTCs

Project objective is to increase Ramp Loading Capacity in order to offer the possibility to deliver higher quantity to DWS, as per Trading diesel sales plan.

Based on the ramp capacity and taking into consideration forecasted sales during peak season, starting with 2016, the gap between sales plan and ramp capacity, is 40 ktons/year of diesel which Refinery will not be able to load by RTCs.

By not having possibility to load through railcar ramp, refinery will be forced to direct this diesel quantity to the export market by ships which will lead to a lower margin of 40\$/t.

After project implementation, Railcar Ramp will have an increased capacity with 20 kt/month in order by assuring necessary loading capacity for domestic market.

➤ **Jet A1 (V28 tank) connecting to export delivery paths via Berth 9**

Project objective is to assure Jet A1 delivery facilities to Refinery Berth 9.

Given the fact that the rail and truck ramps capacities allow higher quantities that can be delivered through these loading points, domestic market is at its maximum limits, thus, possibility to increase market share is not possible. After analyzing Jet delivery channels, it was concluded that the remaining quantity to be valued is to sell by ships trough Berth 9 or to be used as component to produce Diesel Euro 5.

Project benefits within ensuring JET A1 export facilities from V28 tank, via Berth 9 are:

- Increase profitability for Jet A1 product by ensuring facilities for export delivery via marine vessels.
- Align with market demands.

Capital Maintenance

➤ Also, from operational category, a very important place is held by **2015 Refinery General Turnaround** project, technological shut down for equipments periodic inspections, catalysts replacement, maintenance, etc.

For refinery, general shut down means a scheduled large-scale maintenance activity wherein an entire process unit is taken off stream for an extended period for comprehensive revamp and renewal. This operation involves a lot of preparations and requires many precautions, especially at during startup.

For proper refinery equipment reliability, once at 5 years, according to best practices, it is mandatory to perform mechanical verifications, equipment checks and internal inspection.

To reach refinery goal by having a high mechanical availability, refinery must have high reliability at low cost. This can be assured only by having periodically refinery turn around. According to Solomon statement, each 1% increase in mechanical availability can translate into a 10% reduction in maintenance cost, that's why refinery should follow its strategy to reach its objective.

As per refinery scheduled turnaround, Rompetrol followed in the last years, same approach in order to keep refinery reliability at its best value.

The Refinery General Shutdown scheduled for 2015 will take into consideration a series of cyclical activities , such as: regeneration of catalyst and replacement of catalyst (procurement and executing of the mechanical works), the inspections activities from furnaces and dynamic strategic equipment, but also the activities which occur after the execution of the technological process such as: mechanical works to heat exchangers with problems (dismantling or mounting, inspections, washing the tube bundle, pressure tests) the mechanical works to safety valves with problems (dismantling/mounting, inspections, tests) and projects type Capital Maintenance.

Within this project, the benefits are as follows:

1. Make plant safe to operate till next planned shutdown;

2. Improve efficiency of plant within high mechanical availability;
3. Reduce routine maintenance costs.
4. Perform Regulatory Inspection.
5. Increase reliability / availability of equipment during operation
6. Maintain Refinery at its nominal capacity.
7. Complete corrective/preventive maintenance.
8. Achieve 96.5 % mechanical availability after restarting the plants

P&E Director
CRISTIAN BOLOHAN

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CAPEX PLAN 2015 BU REFINING

| Nr. crt. | Project Name | Total Project estimated Budget | 2015 Budget (excluding RIS profit) |
|----------|---|--------------------------------|------------------------------------|
| | Refining | \$ 146,656,564 | \$ 111,599,502 |
| | Petromidia | \$ 124,502,179 | \$ 96,234,050 |
| | Petromidia Development | \$ 11,456,206 | \$ 4,121,424 |
| 1 | Diesel delivery optimization for three direction simultaneously (continuing from 2013) | \$ 1,173,300 | \$ 302,000 |
| 2 | Rehabilitation of IPPA facility (continuing from 2014) | \$ 2,740,628 | \$ 800,000 |
| 3 | Raffinate/gasoline and Jet/diesel loading segregation at Railcar Ramp (Line 17) (continuing from 2013) | \$ 1,054,800 | \$ 860,613 |
| 4 | New loading facility for diesel in Railcar Ramp (increase up to 165kT) (Line 18) (continuing from 2013) | \$ 1,691,700 | \$ 1,000,000 |
| 5 | Modernization of in line blending unit | \$ 1,060,000 | \$ 500,000 |
| 6 | Revamp and automation meteo pumping stations (2 pumping stations) | \$ 1,032,900 | \$ 227,000 |
| 7 | G1 section 1 pumping station modernization (continuing from 2014) | \$ 2,526,636 | \$ 287,633 |
| 8 | Chemical building for G1 Cooling Tower | \$ 176,242 | \$ 144,178 |
| | Petromidia Operational | \$ 111,975,973 | \$ 91,542,626 |
| | Petromidia Operational - Operational support | \$ 207,550 | \$ 73,424 |
| 9 | Forklift and sludge containers purchasing in Willacy Unit (continuing from 2014) | \$ 77,550 | \$ 21,424 |
| 10 | Replacement of TAS related equipments (continuing from 2013) | \$ 130,000 | \$ 52,000 |
| | Petromidia Operational - Compliance | \$ 24,870,780 | \$ 18,460,565 |
| 11 | Fiscal marker injection facility in Fuel Oil | \$ 374,000 | \$ 96,000 |
| 12 | Fiscal measurement utilities for third parties (continuing from 2014) | \$ 133,006 | \$ 116,500 |
| 13 | LPG Fiscal Measurement to Rompetrol Gas (continuing from 2014) | \$ 739,250 | \$ 323,794 |
| 14 | Piezometer wells (3 units) in area dr.22 F315-P12 | \$ 58,300 | \$ 53,000 |
| 15 | Directing piggable discharge valves in V1, V2 vessels (continuing from 2014) | \$ 72,900 | \$ 40,850 |
| 16 | Safety Package in Refinery Platform (continuing from 2014) | \$ 710,000 | \$ 581,200 |
| 17 | Fire-fighting Water Main Replacement, section A-P, section G.I.A.J | \$ 2,750,000 | \$ 500,000 |
| 18 | FGH1 pipe rack rehabilitation | \$ 499,400 | \$ 258,206 |
| 19 | Expertise of the utilities network pipe racks | \$ 165,000 | \$ 26,000 |
| 20 | 135 C1- C7- Seismic evaluation of columns foundations (not C2) (continuing from 2014) | \$ 45,980 | \$ 9,600 |
| 21 | De-clogging the lagoon no.1 entrance area (continuing from 2014) | \$ 233,641 | \$ 104,201 |
| 22 | V26/2 Tank Revamp (continuing from 2014) | \$ 1,347,486 | \$ 689,000 |
| 23 | Increase security level in Petromidia Platform - Refinery Plant (continuing from 2014) | \$ 1,365,032 | \$ 1,035,679 |
| 24 | Expire authorization ISCIR for static equipment's (ISCIR 2015) | \$ 15,500,000 | \$ 14,100,000 |
| 25 | Rehabilitation of civil protection buildings (continuing from 2014) | \$ 800,250 | \$ 450,000 |
| 26 | Intruders detection and safety protection for tanks CCTV systems | \$ 76,535 | \$ 76,535 |
| | Petromidia Operational - Capital maintenance | \$ 86,897,643 | \$ 73,008,637 |
| 27 | Replace bundle of heat exchanger 125 S10 | \$ 143,000 | \$ 50,000 |
| 28 | Returned condensate system rehabilitation | \$ 329,700 | \$ 264,219 |
| 29 | Rehabilitation static equipment for Refinery- Section II (continuing from 2014) | \$ 50,160 | \$ 36,600 |
| 30 | Replace bundle 180 S1A (continuing from 2014) | \$ 437,640 | \$ 364,400 |
| 31 | Replacement tubes bundles heat exchangers 130 S3B and 130 S6, RC plant (continuing from 2014) | \$ 202,700 | \$ 2,000 |
| 32 | Replacement tubes bundles heat exchangers 120 S1A and 120 S9, HB plant (continuing from 2014) | \$ 440,900 | \$ 161,000 |
| 33 | Replacement annular bundle heat exchanger 125 S40 (continuing from 2014) | \$ 162,050 | \$ 106,000 |
| 34 | Fire pumps replacement-Berth 1-4 (continuing from 2014) | \$ 301,500 | \$ 76,000 |
| 35 | General overhaul for power transformers - 3 pieces (SRA 2 - Trafo 2 si SRA 4 - Trafo 1 si 2) | \$ 401,500 | \$ 342,500 |
| 36 | Tank Ditches repairs study | \$ 9,900 | \$ 9,000 |
| 37 | Homogenizers for waste water treatment unit 103/9 (continuing from 2014) | \$ 809,910 | \$ 23,100 |
| 38 | Replace the waste water pipe lines metalical supports (RR - WWTP estacades) | \$ 145,200 | \$ 58,000 |
| 39 | T102 Tank Capital Repair (continuing from 2013) | \$ 486,900 | \$ 53,500 |
| 40 | Rehabilitation of C100 and DV20 tanks and relocation to other storage and delivery paths (continuing from 2014) | \$ 2,480,620 | \$ 859,400 |
| 41 | Bz63 - tank rehabilitation and radar mounting (continuing from 2014) | \$ 422,780 | \$ 262,600 |
| 42 | Repair homogenizers for waste water treatment unit 103/6 (continuing from 2014) | \$ 899,800 | \$ 218,000 |
| 43 | Replace steam heating system at SRM V1 system with electrical heating (continuing from 2014) | \$ 39,345 | \$ 25,000 |
| 44 | P48 tank rehabilitation (continuing from 2013) | \$ 1,150,576 | \$ 402,333 |
| 45 | M90 Tank Rehabilitation (continuing from 2014) | \$ 1,072,225 | \$ 573,075 |
| 46 | T2-417E Tank Rehabilitation | \$ 305,115 | \$ 216,336 |
| 47 | Replacement 100 A2, DAV plant (continuing from 2014) | \$ 1,127,600 | \$ 747,000 |
| 48 | Refinery 2015 General Turnaround (continuing from 2014) | \$ 73,766,722 | \$ 67,657,578 |
| 49 | B52 tank rehabilitation (continuing from 2013) | \$ 1,462,100 | \$ 500,996 |
| 50 | Connect waste water pipelines (F2 Refinery and F1 Petrochemicals) to 3rd lagoon (continuing from 2014) | \$ 249,700 | \$ - |
| | Petromidia Non-Operational | \$ 1,070,000 | \$ 570,000 |
| | Petromidia Non-Operational - IT | \$ 1,070,000 | \$ 570,000 |
| 51 | Change for Good Initiative (Processing of alternative feedstock - PIMS upgrade) | \$ 600,000 | \$ 300,000 |
| 52 | SAP Change Request 2015 | \$ 70,000 | \$ 70,000 |
| 53 | Upgrade Pimms, Orion, Utilities | \$ 400,000 | \$ 200,000 |
| | Petrochemicals | \$ 11,928,110 | \$ 9,430,740 |
| | Petrochemical Development | \$ 2,638,650 | \$ 1,714,400 |
| 54 | Change for good initiative (development of new products) | \$ 1,350,000 | \$ 1,350,000 |
| 55 | Steam cracker reconfiguration study | \$ 110,000 | \$ 100,000 |
| 56 | LDPE storage platform (continuing from 2012) | \$ 734,800 | \$ 200,000 |
| 57 | RPP condensate recovery system (continuing from 2011) | \$ 443,850 | \$ 64,400 |
| | Petrochemicals Operational | \$ 9,289,460 | \$ 7,716,340 |
| | Petrochemicals Operational - Compliance | \$ 3,932,680 | \$ 3,241,628 |
| 58 | Reducing noise level for the equipments belonging HDPE, PP, LDPE units - study (continuing from 2012) | \$ 53,030 | \$ 13,000 |
| 59 | Piping replacement: T 51-2-25C, 043-13003A-100-PL-C40C, 045-13001A-150/80-PL-C40C2 and 80-P-1020-C25C2 pipe repair (continuing from 2014) | \$ 531,500 | \$ 224,240 |
| 60 | Acids and Alkali platform rehabilitation (continuing from 2012) | \$ 712,550 | \$ 370,500 |
| 61 | Angel hair/dust reduction | \$ 435,600 | \$ 335,600 |
| 62 | Expire authorization ISCIR for static equipment's (ISCIR 2015) | \$ 2,200,000 | \$ 2,000,000 |
| 63 | Increase security level in Petromidia Platform - Petrochemicals Plant (continuing from 2014) | \$ 369,160 | \$ 25,288 |
| 64 | Safety Package in Refinery Platform (continuing from 2014) | \$ 330,000 | \$ 273,000 |
| | Petrochemicals Operational - Capital maintenance | \$ 5,356,780 | \$ 4,474,712 |
| 65 | Rehabilitation of cryogenic insulation (storage-unloading line-berth 9) (continuing from 2014) | \$ 440,000 | \$ 352,000 |
| 66 | Thermal insulation rehabilitation | \$ 516,780 | \$ 122,712 |
| 67 | Turnaround RP 2015 | \$ 4,400,000 | \$ 4,000,000 |
| | VEGA | \$ 10,226,275 | \$ 5,934,712 |
| | VEGA Development | \$ 1,128,278 | \$ 885,574 |
| 68 | Delivery optimization for SE solvents | \$ 161,399 | \$ 53,684 |
| 69 | Rehabilitation of existing electrical heating system and expanding this system (continuing from 2014) | \$ 106,480 | \$ 82,100 |
| 70 | Assembly frequency converters on P6R pumps and P2R (continuing from 2014) | \$ 50,699 | \$ 12,790 |
| 71 | Replacement plates heat exchanger with welded plates heat exchanger | \$ 200,000 | \$ 182,000 |
| 72 | Equip the CF Ramp with electronic weighing systems | \$ 168,700 | \$ 154,000 |
| 73 | Replacement of 140-C1, 140-C2 coloumn plates | \$ 441,000 | \$ 401,000 |
| | VEGA Operational | \$ 9,097,997 | \$ 5,049,138 |
| | VEGA Operational - Compliance | \$ 5,434,990 | \$ 2,868,073 |
| 74 | Mount floating membranes on tanks (continuing from 2014) | \$ 439,450 | \$ 23,200 |
| 75 | Upgrading B170 tank (continuing from 2014) | \$ 135,000 | \$ 34,580 |
| 76 | Firefighting and fire prevention system | \$ 144,100 | \$ 121,000 |
| 77 | Equip the CF Ramp with a towing system similar to that of PEM | \$ 35,200 | \$ 10,000 |
| 78 | VEGA Vapor recovery system at railway loading point (continuing from 2014) | \$ 1,315,000 | \$ 1,109,000 |
| 79 | Replacement Lighting installation at C1 and C2 columns-Rectifications (continuing from 2014) | \$ 60,300 | \$ 18,700 |
| 80 | AF ISCIR metal pipes - Rectification Unit- according to PT C6/2010 | \$ 442,500 | \$ 163,500 |
| 81 | Hexane technological platform consolidation (continuing from 2014) | \$ 366,800 | \$ 252,000 |
| 82 | Upgrading retention dams system in the AFP tank park | \$ 654,420 | \$ 100,000 |
| 83 | Authorization operating monorail beams as PTR1/2010 | \$ 140,950 | \$ 98,550 |
| 84 | Increase security level in VEGA Platform | \$ 859,995 | \$ 166,328 |
| 85 | AF ISCIR C6/2010 for Dearomatization pipes | \$ 413,875 | \$ 381,035 |
| 86 | AF ISCIR C10/2010 for CT pipes | \$ 116,050 | \$ 105,750 |
| 87 | Expertize (PEVIT) at Hexane, Rectification, CT and Compressors equipments | \$ 311,350 | \$ 284,430 |
| | VEGA Operational - Capital maintenance | \$ 3,663,007 | \$ 2,181,065 |
| 88 | Revamp of cells as S1, S2 and The separator 20kV at power station PA (continuing from 2014) | \$ 217,000 | \$ 55,000 |
| 89 | P6/1 and P6/2 pumps replacement (continuing from 2014) | \$ 18,480 | \$ 8,300 |
| 90 | Made electric lighting plant in North Park Tank (continuing from 2014) | \$ 143,875 | \$ 100,135 |
| 91 | Rehabilitation technological sewerage | \$ 58,960 | \$ 36,000 |
| 92 | Replaced steam system stifled house north gasoline pumps to reduce steam consumption and safety | \$ 70,000 | \$ 63,900 |
| 93 | Wastewater tank filling system | \$ 323,208 | \$ 294,280 |
| 94 | Replacement of the General Distribution Switchboards in Refining electrical stations | \$ 1,000,000 | \$ 253,500 |
| 95 | Replacing heat exchangers from the Heating Station (S6,S7,S9) | \$ 170,000 | \$ 155,000 |
| 96 | Repair exhaust steam vessel (vacuum producing system in Vacuum Distillation column) - design and mounting | \$ 24,000 | \$ 16,850 |
| 97 | Replacement of 140-S19A pipe bundle | \$ 77,750 | \$ 70,750 |
| 98 | Convertors revision from all technological plants | \$ 22,000 | \$ 20,000 |
| 99 | Vindication of AMC electrical heatings in Hexane plant | \$ 106,480 | \$ 96,800 |
| 100 | Replacement of RADAR measurement system at oxidation tanks | \$ 16,500 | \$ 15,000 |
| 101 | Expertised/consolidated CT degasser | \$ 28,750 | \$ 17,250 |
| 102 | Expertize on boiler CR1 according to PT- C1/2010 | \$ 113,000 | \$ 103,000 |
| 103 | Expertize on forklift according to PT- R1/2010 | \$ 3,750 | \$ - |
| 104 | Vega Shut Down 2015 | \$ 1,269,254 | \$ 875,300 |

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