

Sustainable Freight Pilot Project Ideas Program

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Project Title

Truck Transport Reduction for the Salton Sea Ecosystem Restoration Program

Location of Project

Riverside, California

Executive Summary

FPN USA Inc. is the locomotive operator for the Kaiser Eagle Mountain Railway, a 52 mile track from Ferrum to the Eagle Mountain Mine Property (see Exhibit 1). It is anticipated that FPN USA Inc.'s proposal for purchase of the railway from Kaiser will be closed during the late fourth quarter 2015. The track is located in several disadvantaged communities as identified in SB 535(see Exhibit 2). Built in 1948, the railway operated five GE U30C locomotives to haul iron ore from the Kaiser Eagle Mine to the interchange yard in Ferrum from 1968 to 1986. Four of the five GE U30C units hauled 100 car trains with the fifth locomotive acting as a spare. In 1986 the mine rail line was rendered inoperable. Today, trucks transport the crushed rock from the Kaiser Eagle mine. In July of 2016 the rail line will once again become operable under FPN USA Inc. The newly reestablished line will haul similar 60-100 carload aggregate trains daily using four locomotives and one spare unit. One loaded 286,000 pound rail car displaces the use of a minimum of four trucks for the same haul tonnage or a reduction of between 240-400+ truck loads daily per train consist. FPN USA is engaging rail to displace the use of trucks and is looking to enhance the Salton Sea Ecosystem Restoration Program using five near zero emissions locomotives.

Detailed Description of Pilot Project

The proposed industrial project would be located along the Kaiser Eagle Mountain Railway. The track begins at the Ferrum interchange yard due east of the Salton Sea in Riverside County California. The Eagle Mountain Mine is located at Milepost 51 with the end of the track located at Milepost 51.3. There is a 52 mile track connecting the interchange yard to the mine with associated 1% to 2.15% gradients. Previous rail operations included four unregulated pre-1973 GE U30C locomotives operating on average 19 days a month hauling a train size of 100 cars of iron ore. The yearly aggregate fuel consumption for the four GE U30C locomotives totaled 893,622 gallons of diesel fuel with average fuel consumption per hour equating to 78 gallons per locomotive. Currently, FPN USA Inc. has submitted a competitive bid for 70% to 75% of the rock needed for the Salton Sea Restoration Project's construction of the 52 mile Marine Sea Barrier (see Exhibit 3). Logistically and competitively, it is anticipated that FPN USA Inc.'s bid will be accepted and approved in the second quarter 2016 for planned operational start-up in the third quarter 2016. Plans for the resurrection of the rail line include hauling initially 60 cars of rock 5 days a week using 2 unit trains per day. It is anticipated that aggregate demand in 2018-2020 will drive car loads to 100 train consists using a minimum of 2 unit trains per day under FPN USA Inc.'s operations. Consideration of air quality and transportation congestion is of concern to the overall restoration project. The five near zero emissions locomotives will be hauling approximately 4,450,000 tons of rock annually in 2017 and up to 7,400,000 tons of rock annually in 2018-2020 from the Eagle Mountain Mine to support the construction of the Marine Sea Barrier. This rail operation will be a substantial contributor to the movement of the aforementioned rock to Ferrum while eliminating the use of more than 120,000 truckloads annually in 2017 and more than 200,000 truckloads annually in 2018-2020.

The project would consist of the aggregate power of four new KLV SE32C DE locomotives with one spare unit. The new units proposed are near zero emissions technology for freight movement. The implementation of the new locomotives will substantially improve rail power availability and performance while reducing the need for double handling of the materials via truck. This equipment will also eliminate the need / addition of unregulated locomotives through substantially reduced mechanical and electrical maintenance requirements and corresponding unit downtime. The KLV SE32C DE locomotives will achieve dramatic reductions in current unregulated emissions and significantly lower emissions in all criteria air contaminants compared to current EPA Tier 4 locomotive standards (see Exhibit 4).

Effective reductions include:

	<u>Total Tons</u>	<u>% Change</u>	<u>NOx Tons</u>	<u>% Change</u>	<u>PM Tons</u>	<u>% Change</u>
(4) GE U30C	230.56	-----	175.28	-----	6.32	-----
(4) Tier 4	46.12	79.99	20.20	88.48	.48	92.41
(4) SE32C DE	10.08	95.63	7.76	95.57	.32	94.94

Overall emissions will also be favorably impacted through an estimated 22%+ reduction in fuel consumption for the new aggregate business. The KLV SE32C DE locomotives will generate approximately 202,000 gallons of fuel savings annually compared to the previous iron ore operations using existing unregulated locomotives (reference Exhibit 5).

Consistent with the goals of the Sustainable Freight Action Plan and the objectives of the Sustainable Freight Pilot Project Ideas Program, this project will demonstrate the use of near zero locomotive emissions technologies in several disadvantaged communities along the rail lines. More importantly, the operation will be an example of environmental and technological efficiency using rail and advanced locomotive diesel engine technology. It will significantly improve air quality by reducing mobile source emissions from trucks and associated on-highway traffic congestion. In addition to the inherent air quality benefits of freight movement by rail, FPN USA Inc.'s proposed implementation of near zero locomotive emissions technology will further reduce criteria pollutants, decrease fuel consumption and improve locomotive car pulling capacities. Finally, this project will provide the necessary first steps in transitioning to near zero emissions for locomotives and the subsequent commercialization of the technology for other rail applications and non-attainment zones within the state of California.

Estimated Implementation Costs

Near Zero Emissions Locomotives (5)	\$15,195,000
Transport of Locomotives to the Project Site	135,000
EPA Approved Field Certified Emissions Testing	<u>124,000</u>
Total Project Cost	\$15,454,000
South Coast Air Quality Management District*	\$2,000,000
FPN USA Inc. Funding Commitment	500,000
Knoxville Locomotive Works Funding Commitment	<u>100,000</u>
Total Proposed Funding Commitments	\$2,600,000

* Requires approval from both the South Coast AQMD and the Air Resources Board to include Carl Moyer matching project funds for FY 2016 & FY2017 with the proposed Sustainable Freight Pilot Project Ideas Program.

Timeline

Date of Notification to Proceed: 15 months for locomotive delivery and on-site commissioning
3 months for field certified emissions testing
 Project Completion Schedule: 18 months total

Progress Measurement & Milestones

The project will be managed through the manufacturer's Gantt charts and the control of milestone schedules versus actual completion dates for the locomotive mechanical and electrical sub-assemblies and assemblies. Certified field testing of the locomotives' comparative emissions (unregulated versus near zero) will be scheduled within 30 days of the locomotive delivery and commissioning dates. The CARB approved certified tester will be required to submit a finalized report within 30 days of the comparative testing in the field of the unregulated and near zero emissions locomotives.

Interagency Partner Roles

The primary roles of FPN USA and the SCAQMD will be to process contract documentation expeditiously to ensure that timeline schedules are not delayed due to paperwork constraints and authorizations to proceed. The secondary roles of FPN USA and the SCAQMD will be the coordination of bi-monthly conference calls with Knoxville Locomotive Works to obtain status updates on the manufacturing production schedule. The primary role of Knoxville Locomotive Works will be managing and advancing the production schedule to ensure timetables are met. The secondary role of the locomotive manufacturer will be to coordinate the logistics for locomotive delivery, on-site locomotive commissioning and field emissions testing and reporting.