"Diesel pollution project" to be submitted in the frame of the second FP7 call.
First issue of a risk vs benefit analysis

1. Why is the project being initiated?

To encourage diesel engine manufacturers to develop diesel engines which meet the requirements of stage IIIB of the NRMM directive and which are suitable for railway application.
To determine the capacity of the engines to fulfill even more demanding requirements, further to stage IIB, and possibly propose to the commission a better economic and environmental trade off between a relaxation of IIIB Nox objective (avoid Urea injection), a more drastic reduction of particulates emission and an improvement of efficiency for CO2 reduction.
To check if these engines with their requested environment can be installed on board railway vehicles and evaluate technical and economic consequences to be presented to the European Commission
To check the behaviour in service and ensure reliability
To build a forum of main sector actors that will be, during all the project life span and even further, the main interface with the European Commission for the evolution of the NRMM Directive, the requirement of flexibility schemes etc., supported by a demonstration of the will of the sector to find the best technical and economic solutions for the sustainable development of rail transportation.

2. By whom is the project being initiated?
By UNIFE , UIC European branch and main market actors within the two organizations.

3. What are the objectives and forecast benefits?
See item 1 for the objectives.
a) Benefit will be to establish a sound economic basis for the railway sector to meet the requirements of stage IIIB of the NRMM directive, including to avoid a possible impossibility to put new diesel railway vehicles in service, and to avoid the transfer from rail to road
b) Another benefit will be the possibility to anticipate the design of the railway vehicles to be fitted with stage IIIB compliant engines (benefit to be calculated)
c) the ultimate benefit will be to establish in front of the European Commission a strong sector organization (project supervisory board) able to better protect the sector from unreasonable demands, to negociate practical economic and technical trade-offs, while proposing ambitious pollution reduction for the future so as to maintain and even develop the competitive advantages of the railways transportation systems in terms of sustainable development.

4. How can that benefit be measured?
Short term economic advantages will be easily measured since a significant part of the money will be used for the development of compulsorily needed solutions by both engine manufacturers and rolling stock builders and re-builders.
An indirect benefit to be evaluated through "ERA type" of CBA will be the contribution of this project to the re-enforcement of the rail sector competitive advantages in terms of sustainable development
By proposing further ambitious reduction of pollutant emissions, the project should also contribute in a measurable way to the reduction of railways transportation external costs.

5. Who is taking the benefit?

Long terms benefits for the whole community and the whole railways sector
Short terms benefits for the project members who will receive money for developments that they would have to do in any case.

6. Who is taking the cost?

Costs are taken by the manufacturers which will design and built/transform the vehicles, by the operators which will operate the vehicles, and by the diesel engine manufacturers which will supply the engines.

7. How equitably are the costs and benefits being distributed? (i.e. a proper LCC analysis should be elaborated and agreed upon in the bid preparation or initial work phases)

The main expenses will be supported by the project members, who will also get the highest benefits as their own products, used for the demonstration, will benefit for a market recognition of compliance..

8. Is any party going to lose anything if specific results are implemented?

This is a win-win process for manufacturers and operators, nobody will lose anything when the results are implemented, since the elaboration of more and more drastic environmental objectives by authorities cannot be avoided.
On the Diesel engine manufacturers side the case might be a little bit more complex , as they have other clients from other transportation sectors in competition with rail. However, even though the Euromot might see here a possible conflict of interest, the manufacturers present on the locomotive market (CAT, MTU and others) are not present on the automotive market.
Competition issues between project partners will have to be avoided by careful fencing between different sub-projects involving different manufacturers, only the information of common interest being exchanged.

9. Are all the real stakeholders for implementation of the results represented in the project or do they support the project in some other way?

All stakeholders are going to be represented: operators, vehicles manufacturers, diesel engines manufacturers. Either directly as consortium members or through their 3 representative associations.

10. What are the consequences if part, or all, the implementation fails?

The consequence will be a risk that the rail sector does not meet the requirements of stage IIB of the NRMM directive on time, resulting in high difficulties to put diesel railway vehicle in service for a certain period (until requirements are met) or on difficult negotiations for the postponement of the implementation of stage IIB of the NRMM directive.

11. Who is affected by these consequences of failure?

The railway sector and the whole community due to a resulting transfer from rail to road

12. Is there any up front investment necessary before the benefit can be taken? Surely yes, but refer to question 7 with a demonstrable and increased LCC. Only then should we start the full project.

Yes, cost of the building/adaptation of the vehicles and cost of the diesel engines with their environments.

But this investment will have to be done anyway by actors who want to stay on the market and will not be a consequence of the project as such. To the opposite, the success of the project should result in a decrease of the level of investment needed.

13. Is there anybody who has specific reasons to block implementation? (special interest groups or some potential industry partners excluded from the project?)

To be investigated (for example in case the project would succeed in avoiding Urea injection)
The "road lobby" would of course not see as a positive result a positive conclusion of the project. But it does not see it either as a sufficient threat to take any actual action against it.

14. What are the reasons for their opposition? (Market protection, job protection, call on investment funding, etc…)

All of these reasons

15. Is there a need to change laws or Technical Specifications for Interoperability in order to be able to implement the results?

No in the first step, as the declared objective of the project will be to support the implementation of the present law (stage IIIB of the NRMM Directive).
However, if the project succeeds in the demonstration that better environment/economic trade off are possible, or demonstrate that an intermediate period for implementation of IIIB is needed, then the results should be taken as an input for NRMM revision. Same if the projects succeeds in delivering ambitious while realistic objectives for "stage IV".

16. How can the necessary changes best be implemented? (Through changes to Directives, national regulations or through the TSIs or mandatory or voluntary standards? What happens if there is no enabling legislation such as a Directive, as applied to most of the urban sector?)

See above

17. What are the probabilities to succeed with the necessary changes to the law or TSIs? See 16

If a change in the NRMM stage IIIB is ultimately needed it will not be a consequence of the research but a matter of fact that the project will simply strongly enlighten. But the project will help a lot in getting these necessary changes accepted.
As far as further steps in the regulation are concerned, they will be unavoidable in any case, here also the project will be a strong support to the definition of ambitious but economically sensible objectives.

18. Are there any unknown parameters affecting implementation? (Fees, hidden costs or permissions required, etc…)

Not yet identified.

19. Is there a need to redesign products to gain any benefits from the project? See 12.

Redesign is firstly needed to meet the requirements.

20. Is there a need to make changes to already installed base of vehicles or infrastructure?

One of the targets is to minimize the changes necessary to the vehicle.

21. If there is no need to change the existing installed base, can the existing base be disadvantaged in any way?
22. N/A

23. Who pays for the above changes and how will investment be funded? LCC must demonstrate.
The vehicle and engine manufacturers for initial investment, the operators for series costs and amortization of the investments. No need for LCC demonstration here as the ultimate objective is simply compliance with the law !

24. Is the project underwritten by all stakeholders, at an operational level, with an appropriate level of authority?
Already explicitly supported at the appropriate level for the preparation of the project by SNCF, DB, Alstom, Siemens, Bombardier, Vossloh, Voith, CAT , MTU

25. Are there any negative impacts of implementation foreseen which could threaten implementation in the longer term?
A negative impact may be an additional cost of the diesel engines and of the vehicles.
Another negative impact may be the necessity to reduce the traction performances of the vehicles because of unacceptable increase of volume or mass of the diesel engine and its environment.
However these impacts could not be seen as a result of the project but as a result of the regulation.
To the opposite, an objective of the project will be to identify and quantify these impacts.

26. Are there any existing projects whose results could be in conflict with this one?
No.

27. Are there any other projects supporting or depending on this one?
No

28. Are the results of the project immediately capable of implementation or is some additional research work likely to be required?
The aim is to have results immediately capable of implementation.

29. Can an ‘Early Adopter’ be identified and brought into the project from day one?
All the main partners (Alstom, Siemens, Bombardier, SNCF, DB etc.) are potential early adopters, since in particular DB and SNCF are going to issue call for tenders requesting compliance.

30. Are there any ‘parallel’ activities at the level of CEN/CENELEC/ETSI/IEC/ IEEE in this area?
No.