

EFSI Operation Scoreboard¹

PROJECT PRESENTATION	
Project name	TTTECH AUTONOMOUS DRIVING RDI
Promoter and financial intermediary	TTTECH AUTO AG
Country of implementation	Austria, Spain
Summary project description	<p>The two main areas that drive the current development activities in the automotive sector are: (i) CO2 emissions reduction, to be addressed with improvements in conventional internal combustion engine technologies and electrification of powertrains and (ii) automated and connected vehicles; in this area in the short-term it is expected that part of the fleet will have level 2 ("partial automation" e.g. Park Assist, Lane Change control, Highway assist), Level-3 ("conditional automation" e.g. Highway driving, traffic jam assist, auto parking etc.) automation functionalities, as well as variants between them, while as the time passes, the level of automation and autonomy as well as the penetration of these technologies are expected to grow drastically. Level 4 automation concerns full automation in controlled environments and a number of related pilot projects are expected to take place between 2020 and 2025, while some level 5 (full automation) production vehicles are expected to be on the roads by 2030.</p> <p>The project concerns selected RDI activities for the development of advanced driver-assistance systems (ADAS) and autonomous driving technologies. More specifically the project development activities concern: (i) software platform for the safe real-time execution of automated driving functions in autonomous driving systems (ii) safety software that calculates a safe driving envelope and (iii) integrated computing platform for all vehicle domains and controls. The promoter's RDI activities are therefore fully in line with one of the sector's key trends.</p>

¹ This Scoreboard of indicators reflects the information presented to the EFSI Investment Committee (IC) for its decision on the use of the EU guarantee for this operation. Therefore, the document does not take into account possible developments that could have occurred after this decision.

Parts of this document that fall under the exceptions for disclosure defined by the EIB Group Transparency Policy, notably under articles 5.5 (protection of commercial interests) and 5.6 (protection of the Bank's internal decision-making process), have been replaced by the symbol [...].

PROJECT PILLAR ASSESSMENT

Pillar 1

Contribution to EU policy	Significant
EFSI	
Contribution to EFSI	100.00%
EFSI: Research, development and innovation	100.00%
Projects that are in line with Horizon 2020	100.00%

Pillar 2

Quality and soundness of the project	Good
1. Growth	[...]
2. Promoter capabilities	[...]
3. Sustainability	[...]
4. Employment	[...]

This pillar evaluates the quality and soundness of the operation. This pillar is composed of up to four indicators, as relevant, among which:

- (i) "Growth" i.e. for example and where relevant the economic rate of return ('ERR'), which considers the project's socioeconomic costs and benefits, including its spillover effects;
- (ii) "Promoter capabilities" i.e. the capacity of the promoter/intermediary to implement the project and create the expected impact at the [final] beneficiary level;
- (iii) "Sustainability" i.e. environmental and social sustainability²;
- (iv) "Employment" i.e. the project's direct employment effect;
- (v) "Increasing access to finance and improving financing conditions including for final beneficiaries".

Pillar 3

EIB Technical and financial contribution to the project	Significant
1. Financial contribution	[...]
2. Financial facilitation	[...]
3. Advice	[...]

This pillar measures the EIB's particular contribution to the project and its financing scheme in the form of financial and non-financial benefits which go beyond what commercial players would normally be able to offer. This dimension of value added is assessed through up to three indicators:

- (i) "Financial Contribution" i.e. improving the counterpart's funding terms compared to market sources of finance (interest rate reduction and/or longer lending tenor);
- (ii) "Financial Facilitation" i.e. helping to attract private financiers (for example through positive signaling effects), promoting synergies in co-financing with other public sources of funds including National Promotional Banks or EU financial instruments;
- (iii) "Technical Contribution and Advice" i.e. providing advice with a view to optimizing the financing package (financial structuring), or technical advisory services in the form of expert input / knowledge transfer - provided in-house by the EIB or in the form of assignments to external consultants - to facilitate the preparation or implementation of a project.

² For additional information on the EIB's assessment of the project's environmental and social aspects, please refer to the project's Environmental and Social Data Sheet (ESDS) published on the EIB website.

Pillar 4 - Complementary indicators

Additionality

This operation is in line with the EFSI objective of supporting research, development and innovation in order to develop ADAS, as well as software based autonomous driving technologies. The project will enable the borrower to retain its innovative edge and long-term competitiveness in the fast growing market and thereby contribute to Europe's R&D, competitiveness and economic growth helping maintain highly skilled staff engaged in R&D activities in Europe. The project falls under the scope of the EU Horizon 2020 programme (Societal Challenges - Smart Green and Integrated Transport).

The financing of this project addresses a market failure by supporting RDI activities, which generate significant positive knowledge and technology externalities through the creation of innovative processes, products and services and through skills development. Furthermore, the developments in the ADAS sector is expected to create knowledge spillovers.

The EIB loan is expected to catalyse investments in new emerging and transformational technologies in the automotive industry that are currently hindered by the high risk related to these R&D activities. Further contributing to this suboptimal investment situation is the complex market situation characterised by demand volatility and uncertainty with regard to the market acceptance of the new technological modalities. Moreover, a changing regulatory environment may discourage investment activity.

The project is expected to be classified under the EIB Special Activities category, in particular due to the long tenor of the unsecured loan and the inherent uncertainty of outcomes of the R&D investments and their future take-up by the market. As such, the EIB would not be able to provide such type of unsecured long-term financing support during the period in which the EU guarantee can be used, or not to the same extent, without EFSI.

The financing provided by the EIB with the support of EFSI is expected to result in a quality stamp on the operation. By increasing commercial banks' confidence in the promoter's long-term sustainability and its RDI strategy, the EIB intervention is also expected to catalyse future private sector financing.

The operation is expected to receive EU and national grant financing.

The operation will be the first for the EIB with the borrower.

Set of indicators related to the macroeconomic environment

Austria - Economic environment

Economic Performance

	AT 2018	EU 2018	US 2018	AT 2001-2007
GDP per capita (EUR, PPS)	39,299.90	30,935.11	43,569.11	37,529.55
GDP growth (%)	2.72	1.96	2.85	2.28
Potential GDP growth (%)	1.79	1.60	2.23	2.19
Output gap (% of potential GDP)	0.99	0.61	0.74	0.04
Unemployment Rate (%)	4.60	6.60	3.90	4.92
Unemployment Rate (%) - Y/Y change (% points)	-0.80	-0.60	-0.20	0.08
Bank-interest rates to non-financial corporations (%)	1.24	1.26	--	3.89
Bank-interest rates to non-financial corporations (%) - Y/Y change (% points)	-0.14	-0.06	--	-0.21
Investment rate (GFCF as % of GDP) - Total	23.89	20.54	20.84	23.51
Investment rate (GFCF as % of GDP) - Public	2.97	2.85	3.30	2.67
Investment rate (GFCF as % of GDP) - Private	20.91	17.68	17.53	20.84

General Sector Indicators

	2014	2015	2016	2017	EU (latest available)
Value added in Manufacture of computer, electronic and optical products (% of total VA)	0.97	0.93	0.97	1.05	0.83
Employment in Manufacture of computer, electronic and optical products (% of total employment)	0.53	0.53	0.55	0.55	0.49

Research, development and innovation

	2014	2015	2016	2017	EU (latest available)
Gross domestic expenditure on R&D (GERD) (% of GDP)	3.08	3.05	3.13	3.16	2.06
Gross domestic expenditure on R&D (GERD) distance to EU 2020 target (% of GDP)	0.68	0.71	0.63	0.60	0.94
Research and development expenditure - Government (% of GDP)	0.14	0.14	0.22	0.22	0.23
Research and development expenditure - Higher education (% of GDP)	0.73	0.72	0.69	0.70	0.45
Research and development expenditure - Business (% of GDP)	2.20	2.18	2.19	2.22	1.36
Research and development expenditure - Private non-profit sector (% of GDP)	0.01	0.01	0.02	0.02	0.02
Eco-innovation index (EU =100)	103.00	105.00	109.00	113.00	100.00

Spain - Economic environment

Economic Performance

	ES 2018	EU 2018	US 2018	ES 2001-2007
GDP per capita (EUR, PPS)	28,497.70	30,935.11	43,569.11	29,209.95

GDP growth (%)	2.58	1.96	2.85	3.55
Potential GDP growth (%)	1.16	1.60	2.23	3.58
Output gap (% of potential GDP)	0.87	0.61	0.74	2.74
Unemployment Rate (%)	14.40	6.60	3.90	9.98
Unemployment Rate (%) - Y/Y change (% points)	-2.10	-0.60	-0.20	-0.34
Bank-interest rates to non-financial corporations (%)	1.69	1.26	--	3.78
Bank-interest rates to non-financial corporations (%) - Y/Y change (% points)	0.13	-0.06	--	-0.04
Investment rate (GFCF as % of GDP) - Total	21.21	20.54	20.84	28.71
Investment rate (GFCF as % of GDP) - Public	2.10	2.85	3.30	4.14
Investment rate (GFCF as % of GDP) - Private	19.11	17.68	17.53	24.57

General Sector Indicators

	2014	2015	2016	2017	EU (latest available)
Value added in Manufacture of computer, electronic and optical products (% of total VA)	0.31	0.30	0.31	0.29	0.83
Employment in Manufacture of computer, electronic and optical products (% of total employment)	0.22	0.21	0.22	0.24	0.49

Research, development and innovation

	2014	2015	2016	2017	EU (latest available)
Gross domestic expenditure on R&D (GERD) (% of GDP)	1.24	1.22	1.19	1.20	2.06
Gross domestic expenditure on R&D (GERD) distance to EU 2020 target (% of GDP)	0.76	0.78	0.81	0.80	0.94
Research and development expenditure - Government (% of GDP)	0.23	0.23	0.22	0.21	0.23
Research and development expenditure - Higher education (% of GDP)	0.35	0.34	0.33	0.33	0.45
Research and development expenditure - Business (% of GDP)	0.65	0.64	0.64	0.66	1.36
Research and development expenditure - Private non-profit sector (% of GDP)	0.00	0.00	0.00	0.00	0.02
Eco-innovation index (EU =100)	111.00	109.00	99.00	112.00	100.00

- Country average for "GDP per capita (EUR, PPS)" is calculated in real terms

- EU value for "Bank-interest rates to non-financial cooperations" corresponds to Euro Area average; Country average is the simple average between 2003 and 2007

- The EU value is displayed as the value in the year that corresponds to the latest value of the indicator in a particular country

Other indicators³

Key project characteristics	Expected value at PCR
Start of works	01.01.2019
End of works	31.12.2022
Project investment cost [MEUR]	87.05 MEUR
EIB/EFSI eligible investment mobilised [MEUR]	85.55 MEUR
External EFSI multiplier	2.85
External EIB (non-EFSI) multiplier	
Amount of private financing [MEUR]	55.55 MEUR
Quick start (% of expenditure during 2015-2018) [%]	
Co-financing with national promotional banks [MEUR]	0.00 MEUR
Co-financing with structural funds (ESIF) [MEUR]	0.00 MEUR
Co-financing with other EU instruments (i.e. Horizon 2020, Connecting Europe Facility, etc) [MEUR]	
Energy efficiencies realised [MWh/a]	0.00 MWh/a
Climate Action indicator	
Employment during construction - temporary jobs [person years]	552 person years
Employment during operation - new permanent jobs [FTE]	300 FTE

³ For additional information on the EIB's assessment of the project's environmental and social aspects, please refer to the project's Environmental and Social Data Sheet (ESDS) published on the EIB website. The abbreviation PCR stands for Project Completion Report. If applicable, a difference between the amount of Project investment costs and EIB/EFSI eligible investment mobilized might derive from the fluctuation of the underlying exchange rate.