ET2050 Consortium
September 15th Steering Committee Meeting in Brussels

The meeting takes place at the Ministry of Brussels-Capital Region (on top of the North Railway station), from 9:00 h to 18:00 h. The paramount goals of the meeting are discussing exploratory scenarios 2010-2050, and the modelling process, as well as the revision of the Interim Report according to Sounding Road and ESPON CU remarks.

The 15th September at 18.00 h (La morte suite) and at 19.30 h (Touvre passage, Galérie de la Reine) open informal meetings are suggested to participants.

Materials of the Meeting

Danuta Hübner, chair of Regional Committee of the European Parliament and former European Commissioner for Regional Policy, meets Peter Echlebe (ESPOI Director), Iacov Saltcha (GH, ET2050 partner) and Andreu Uliba (ICRIT, ET2050 Lead Partner) at the European Parliament 18-09-2012

Professor Danuta Hübner is a Polish economist, academic, and policy maker. She served as European Commissioner for Regional Policy from 22 November 2004 until 4 July 2009, when she resigned to become a Member of European Parliament for the Civic Platform. She is the Chair of the Regional Development Committee, and also works in the Committee on Economic and Monetary Affairs and the Special Committee on the Financial, Economic, and Social Crisis.

About Danuta Hübner
Download The achievements of Europe’s regional policy, 2004-2009
Download the Reflection paper on future Cohesion Policy
From Project Specifications:

The ESPON Monitoring Committee, DG Regio and the ESPON Coordination Unit wish to start a territorial vision-building process that involves relevant stakeholders at European, national and regional level, having 2050 as time horizon.
ET2050 Methodology

Scientifically-driven *(what may happen in the future?)*

Politically-driven *(what we would like to happen?)*
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<th>Domain</th>
<th>Forecast Models 2010-2030</th>
<th>Coverage</th>
<th>Partner</th>
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<td>MULTIPOL</td>
<td>ESPON at NUTS2</td>
<td>OIM</td>
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<td>Cohort-component, hierarchical, multiregional, supranational model of population dynamics (up to 2030)</td>
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<td>Economy</td>
<td>MASST</td>
<td>ESPON at NUTS2</td>
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<td>Econometric: social, macroeconomic and Territorial (up to 2030)</td>
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<td>Transport</td>
<td>TT/MOSAIC</td>
<td>EU27 at NUTS2</td>
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<td>Integrated modal split and traffic assignment based on TRANSTOOLS OD trip matrices (up to 2030)</td>
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<td>Land-use</td>
<td>METRONAMICA</td>
<td>EU27 at Cells 1 km2</td>
<td>RIKS</td>
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<td>Spatial and dynamic land use model that Uses constrained cellular automata to allocate land-uses (up to 2050)</td>
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<td>Integrated</td>
<td>SASI</td>
<td>ESPON and Western Balkans at NUTS3</td>
<td>S&amp;W</td>
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<td>Dynamic System linked to transport networks (up to 2050)</td>
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<td>Domain</td>
<td>Foreight Meta-models 2030-2050</td>
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<td>Integrated</td>
<td><strong>TV+</strong>&lt;br&gt;First version developed in the TRANSVISIONS study (DGMOVE, 2008) to support the EC Communication on the Future of Transport, Revision of White Paper and TENs Guidelines (up to 2050)</td>
<td>Europe</td>
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<td>Integrated</td>
<td><strong>PASH+</strong>&lt;br&gt;First version developed in the PASHMINA 7FP project (2011) (up to 2050)</td>
<td>World</td>
<td>MCRIT</td>
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<td>Domain</td>
<td>Policy-evaluation</td>
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<td>TIA</td>
<td>Territorial Impact Assessment First version developed in the ESPON 3.2 study, then refined and applied in several ESPON projects (TIPTAP…).</td>
<td>Europe</td>
<td>POLIMI</td>
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</tbody>
</table>

1. Definition of **criteria** to evaluate policy-aims
2. Definition of **relative weights** (in the ESPON MC frame)
3. Identification of scientifically sound **indicators** to measure the criteria (to be calculated with outputs produced by forecast and foresight models)
4. **Evaluation of the scenarios**, and based on the evaluation adjustment of the scenarios
5. **Evaluation of the VISION**, and based on the evaluation refinement
European Territorial Scenarios 2050

World Reference Scenario
European Weight Disminishing at World Level

1990-2010 evolution of European weight in the World, and hypothesis for 2010-2050 (PASH+ foresight)
World Output Becomes More Balanced

European High Imperialism

USA become a Superpower
# World Reference Scenario

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<tbody>
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<td>World Population</td>
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<td>World Urban Population</td>
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<tr>
<td>(% over total population)</td>
<td>29%</td>
<td>33%</td>
<td>36%</td>
<td>39%</td>
<td>43%</td>
<td>46%</td>
<td>50%</td>
<td>55%</td>
<td>59%</td>
<td>64%</td>
<td>69%</td>
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<tr>
<td>World illiteracy rate</td>
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<tr>
<td>(% of population 15+)</td>
<td>44%</td>
<td>41%</td>
<td>37%</td>
<td>30%</td>
<td>24%</td>
<td>18%</td>
<td>17%</td>
<td>14%</td>
<td>11%</td>
<td>9%</td>
<td>7%</td>
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<td>World Gini Coefficient</td>
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<tr>
<td>(Income Disparities)</td>
<td>0.63</td>
<td>0.64</td>
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<td>0.66</td>
<td>0.66</td>
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<td>0.62</td>
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<td>World GDP</td>
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<td>World total trade</td>
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<tr>
<td>(goods % services in 1000 million €)</td>
<td>125</td>
<td>178</td>
<td>479</td>
<td>2.250</td>
<td>5.625</td>
<td>13.027</td>
<td>19.947</td>
<td>36.060</td>
<td>65.189</td>
<td>100.27</td>
<td>154.23</td>
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<tr>
<td>Global seaborne traffic</td>
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<td>(billion tonne·km)</td>
<td>4.862</td>
<td>7.197</td>
<td>10.654</td>
<td>16.777</td>
<td>16.440</td>
<td>22.927</td>
<td>32.746</td>
<td>48.472</td>
<td>69.707</td>
<td>100.24</td>
<td>144.16</td>
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<td>Global air traffic</td>
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<td>(billion RPKs)</td>
<td>226</td>
<td>368</td>
<td>600</td>
<td>1.100</td>
<td>2.100</td>
<td>3.381</td>
<td>4.621</td>
<td>7.491</td>
<td>12.145</td>
<td>19.688</td>
<td>31.918</td>
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<td>World Tourism</td>
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<tr>
<td>(million overnight visitors per year)</td>
<td>25</td>
<td>64</td>
<td>109</td>
<td>170</td>
<td>319</td>
<td>560</td>
<td>940</td>
<td>1.281</td>
<td>1.746</td>
<td>2.379</td>
<td>3.241</td>
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<td>World energy consumption</td>
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<td>World CO2 emissions</td>
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<td>Real crude oil price</td>
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<td>(€2010 per barrel)</td>
<td>13</td>
<td>12</td>
<td>9</td>
<td>82</td>
<td>33</td>
<td>30</td>
<td>67</td>
<td>108</td>
<td>121</td>
<td>130</td>
<td>138</td>
</tr>
</tbody>
</table>
World Baseline Reference (FIR)

- Population: 9.200 M  (Europe from 15% in 1950 to 7% today and 6% in 2050)
- Urban population: 69%  (Europe 89% in 2050)
- GDP: € 135.000 billion  (Europe from 39% in 1950 to 30% today and 18% in 2050)
- Trade: € 154.000 billion  (Europe from 17% in 1950 to 15% today and 9% in 2050)
- Maritime transport: € 145.000 billion ton·km (average 3,7% annual growth, EU 2%)
- Air transport: € 32.000 billion RPK (average 5,0% annual growth, EU 3,5%)
- Tourism: 3.250 million visitors (Europe from 90% in 1950, 45% today and 27% 2050)
- Energy Consumption: 24.300 MTOE (Europe 28% in 1950, 17% today, 9% in 2050)
- CO2 emissions: 64.000 Mton (Europe from 18% in 1950, 15% today, and 5% in 2050)
European Territorial Scenarios 2050

Present State of Europe
The Sapir Report (2004): An Agenda for a Growing Europe

“Over the past decade European economic integration has seen considerable institutional success, but the economic performance of the EU has been varied. While macroeconomic stability has improved and an emphasis on cohesion preserved, the EU economic system has not delivered satisfactory growth performance”.

This opinion is the report of a high-level group commissioned by the President of the European Commission to review the EU economic system and propose a blueprint for an economic system capable of delivering faster growth along with stability and cohesion.
Felipe González Europe 2030 Group (2010): Reform or Decline?

“The challenges we face today are different to those of the past and call for different responses. Europe has lost its political momentum and risks falling into a deepening decline unless its leadership can convince European voters to embrace a more sweeping, unifying strategy to marshal the full potential of the 27-nation bloc … …the choice for the EU is clear: reform or decline”.

2000-2008: Moderate Growth & Convergence

2000-2008 economic convergence was real and sustainable?
2008-2013: Financial Crisis & Divergence

To what extend the crisis will have lasting impacts?
EU Council President Herman Van Rompuy has warned that the eurozone and the European Union itself are fighting for their life as a result of the ongoing sovereign debt shocks. "We're in a survival crisis," the president said. If the eurozone does not survive, neither will the EU.
Present State

- Financial Crisis leading to dramatic financial unbalances
- Economic Disparities have grown 2008-2013
- Social Welfare Reduced (unemployment and public cuts)
- Weaknesses of European policies (Monetary and Fiscal…)
- European strong austerity policies unique at World level

*Ex-post Evaluations of Cohesion policies should be reviewed?*
IMF Economic Forecast 2008-2017

GDP Growth 2008 - 2017, 10 years period (Source: IMF 2013)
Measured as annual average GDP growth rate along the period

GDP Growth annual average rate (Units: %)
Results obtained by IMF
-1.6% - 0%
0% - 0.6%
0.6% - 1%
1% - 1.6%
1.6% - 3.8%
No data (ESPON space)
No data (No ESPON space)
2008-2013: Opening to Global Markets

Trade in M€ of Companies located in Germany

- export - extraEU27
- export - intraEU27
- import - extraEU27
- import - intraEU27
Trade in M€ of Companies located in France

Rebalancing Trade

[Diagram showing trade trends from 1999 to 2012, with lines for export-extraEU27, export-intraEU27, import-extraEU27, and import-intraEU27.]
Trade in M€ of Companies located in Spain
Increasing Globalisation of European Economies

Accumulated FDI stock in M€ (2008)

European Union (27 countries) Extra EU-27

- France
- Italy
- Spain
- United Kingdom
- Germany
Increasing Globalisation of European Economies

Trade in M€ (2008)

France: extraEU27 - export, extraEU27 - import, intraEU27 - export, intraEU27 - import
Germany: extraEU27 - export, extraEU27 - import, intraEU27 - export, intraEU27 - import
Italy: extraEU27 - export, extraEU27 - import, intraEU27 - export, intraEU27 - import
Spain: extraEU27 - export, extraEU27 - import, intraEU27 - export, intraEU27 - import
United Kingdom: extraEU27 - export, extraEU27 - import, intraEU27 - export, intraEU27 - import
Global Specialisation for EU Economies

Accumulated FDI stock in M€ (2008)

Brazil | Canada | China (except Hong Kong) | Japan | Offshore financial centers | Russia | United States

- France
- Italy
- Spain
- United Kingdom
- Germany
Increasing Globalisation of European Economies

Air Passengers (2008)

France
Germany
Italy
Spain
United Kingdom

extraEU27 intraEU27
European Territorial Scenarios 2050

Baseline Scenario for Europe
More stable population. Depopulation of Eastern European rural regions

Aging in most regions

Continuous East-West labor-related migrations.

Average economic growth at a moderate, not marginal, level

Divergent economies, with higher productivity gaps

More jobs being created everywhere, with lower salaries

Marginal economic growth is not always related to productivity gains
Baseline 2030

- Reindustrialisation of the economy
- Technological innovation concentrated only in some sectors and regions.
- Increasing dependency of more expensive energy
- Limited cross-border territorial integration
- Increasing road share
- Polarised development in global transportation nodes
- Expansive land consumption, and more hybrid urban-rural geographies
- Reduction on GHG in more advanced industrial economies
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Baseline 2030</th>
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<tbody>
<tr>
<td><strong>Total Population in 2030</strong> (in millions; 514 million in 2010)</td>
<td>530.2</td>
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<tr>
<td><strong>Total Migrations 2010-2030</strong> (cumulated number of migrants in millions)</td>
<td>37.9</td>
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<tr>
<td><strong>Economic Growth</strong> (average yearly increase 2010-2030)</td>
<td>+1.89%</td>
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<tr>
<td><strong>Regional Divergence</strong> (GINI coefficient in 2030; 26.1 in 2008)</td>
<td>28.5</td>
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<tr>
<td><strong>Total Employment</strong> (average yearly increase 2010-2030)</td>
<td>+1.59%</td>
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<tr>
<td><strong>Manufacturing Employment</strong> (average yearly increase 2010-2030)</td>
<td>+1.38%</td>
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<tr>
<td><strong>Service Employment</strong> (average yearly increase 2010-2030)</td>
<td>+1.63%</td>
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<tr>
<td><strong>Total transport demand for passengers</strong> (total pax·km increase 2010-2030 in %)</td>
<td>+39.0%</td>
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<tr>
<td><strong>Total travel cost</strong> (total euros increase 2010-2030 in %)</td>
<td>+39.3%</td>
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<tr>
<td><strong>Total time spent travelling</strong> (total hours increase 2010-2030 in %)</td>
<td>+41.0%</td>
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<tr>
<td><strong>Total CO2 due to transport</strong> (total tones increase 2010-2030 in %)</td>
<td>-25.2%</td>
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<tr>
<td><strong>Total CO2</strong> (total tones increase 2010-2030 in %)</td>
<td>-28.9%</td>
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</table>
Scenarios 2030: Population

Total Population 2010 - 2030 (Baseline)
Measured as annual average population growth rate along the period

Ageing 2010 - 2030 (Baseline)
Measured as annual ageing increase rate

Population relative change (Units: %)
Results obtained by MULTIPOLIS forecast model

- < -0.5%
- -0.5% - 0%
- 0% - 0.5%
- 0.5% - 1%
- > 1%
- No data (ESPON space)
- No data (No ESPON space)

European population growth will tend towards stabilisation.
Total population (ESPON Space) will grow from 514 million in 2010 to 526 million in 2030.
MULTIPOLIS is a cohort-component population dynamics model. It is used for the simulations of complex hierarchical multiregional, multi-country population systems; for analysing impact of various scenarios concerning migration, fertility, and mortality.

Old Age Dependency Rate 2010 - 2030 increase (Units: %)
Results obtained by MULTIPOLIS forecast model

- < 1%
- 1% - 2%
- 2% - 2.5%
- 2.5% - 3%
- > 3%
- No data (ESPON space)
- No data (No ESPON space)

Ageing grows fast across Europe. Percentage of population older than 65 years increases in Europe from 20% to 40% (2010M of elderly). MULTIPOLIS a cohort-component population dynamics model that considers population age groups in 5 years, also for migrants. The Old Age Dependency Rate is measured:
ODR = Population > 64 / population 15 - 64.
Baseline 2030: Net Migration

Net Migration 2010 - 2030 (Baseline)
Measured as annual net migration along the period

This map shows the estimated net migration in Europe for the period 2010-2030, based on the MULTIPOLES model. The colors represent the number of persons migrating:
- < 5000 (Green)
- 5000 - 10000 (Yellow)
- 10000 - (Orange)
- > 10000 (Red)

East-West migration increases, as well as from rural to large metropolitan regions. Total migration increases up to 20 million.

MULTIPOLES is a cohort-component population dynamics model projection of migration flows and is based on labour markets assumptions. Residential tourism of Northern Europeans to, for instance, in Southern regions, is not considered.
**Baseline 2030: Economic Growth**

GDP Growth 2008 - 2017, 10 years period (Source: IMF 2013)
Measured as annual average GDP growth rate along the period

GDP Growth 2010 - 2030, 20 years period
Measured as annual average GDP growth rate along the period

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**GDP Growth annual average rate (Units: %)**
Results obtained by IMF

- -1.6% - 0%
- 0% - 0.6%
- 0.6% - 1%
- 1% - 1.6%
- 1.6% - 3.0%
- No data (ESPON space)
- No data (No ESPON space)

**GDP Growth annual average rate (Units: %)**
Results obtained by MAST3 forecast model

- 0.32% - 1.32%
- 1.33% - 2.26%
- 2.28% - 2.63%
- 2.63% - 3.81%
- No data (ESPON space)
- No data (No ESPON space)
Baseline 2030: Growth per capita

Relative change in GDP per capita from 2008 to 2030 (Baseline)
Measured in percentage (%) to the EU27 average GDP growth

Relative change in GDP per capita from 2008 to 2030 (Baseline)
Measured in percentage to EU31 average GDP growth

Relative change in GDP per capita growth in relation to EU27 average
Results obtained by MASST (Economy) and MULTIPOL (Demography) forecast models
- 15% - 5%
- 5% - 15%
- > 15%

Relative change in GDP per capita growth in relation to EU31 average (Units: %)
Results obtained by MASST3 forecast model
- 5% - 10%
- 11% - 20%
- 21% - 41%
- > 41%
- No data (ESPON space)
- No data (No ESPON space)
End of the Economic Convergence process
End of the Economic Convergence process?

European GDP per capita evolution 2000-2030

- ESPON (EU31)
- EU12
- EU15
- EU27
Baseline 2030: Employment

Employment 2010 - 2030 (Baseline)
Measured as annual average employment growth rate

Service and manufacturing employment 2010 - 2030 (Baseline)
Measured as annual average employment growth rate related to EU average growth rate

Employment growth annual average rate (Units: %)
Results obtained by MAST3 forecast model
- < 1%
- 1% - 1.5%
- 1.5% - 2%
- > 2%
- No data (ESPON space)
- No data (No ESPON space)

Employment grows at a sustained rate in Europe, meaning that large part of the recovery from the crisis comes from job creation and lower salaries, instead of productivity gains. (ESPON Space annual average employment growth rate 1.5%)

Service and manufacturing employment growth
Results obtained by MAST3 forecast model
- Both rates below to EU average
- Manufacturing employment growth rate over to EU average
- Service employment growth rate over to EU average
- Both rates over to EU average
- No data (ESPON space)
- No data (No ESPON space)

Manufacturing employment grows at similar rates that services, in a reindustrialisation process. (ESPON Space annual average of manufacturing employment growth is 1.4% and annual average of services employment growth is 1.6%).

MAST3 is an economic, macroeconomic, sectoral, social and territorial model. It has been upgraded to explicitly take into account the impact of the current economic crisis.
Baseline 2030: Global and European Accessibility

Global Accessibility 2010 - 2030 (Baseline)
Measured as potential intercontinental airplane seats and containers in relation EU average

European Accessibility 2010 - 2030 (Baseline)
Measured as change in accessible population weighted by shortest access time

Passengers and Freight Global Accessibility
- Green: Passengers and Freight accessibility are expected to increase below EU average
- Light green: Passengers accessibility is expected to increase over EU average
- Dark purple: Freight accessibility is expected to increase over EU average
- Light purple: Passengers and Freight accessibility are expected to increase over EU average
- Light blue: No data (ESPON space)
- Blue: No data (No ESPON space)

Global accessibility will increase around transport nodes: intercontinental airports and major ports.

Absolute variation in accessibility 2010-2030 (Units: Millions Equivalent population)

Accessibility changes are very much influenced by population changes, because of the relative homogeneous transport involvement across Europe, and despite the relatively higher investments on infrastructure planned in Eastern European regions. The accessibility in each NUTS3 is measured as the sum of the population of all other NUTS3 weighted by the shortest multimodal access time. NUTS3 population is attached to the capital city. Population in 2030 by MULTIPOL/MAST models and shortest multimodal access by MOSAIC model.
Baseline 2030: CO2 emissions

CO2 Transport Emissions 2010 - 2030 (Baseline)

Measured as saving potential emissions due to transport

CO2 Transport emissions (Units: Millions of CO2 tonnes saved)

Results obtained by MOSAIC Model

- < -100
- -100 to 0
- 0 to 50
- > 50
- No data (ESPON space)
- No data (No ESPON space)

Reduction of 16% of Transport CO2 emissions. The combined impact of economic crisis with reduced GDP growth, and the use of more environmentally friendly energy sources leads to a net reduction of CO2 emissions especially in more industrialized and populated regions.

Results are based on assumptions based on transport traffic forecasts by MOSAIC as well as in other economic sectors.
European Territorial Scenarios 2050

Exploratory Scenarios 2030
According to Project Specifications:

This scenario provides an image of the European territory in which economic and population growth as well as public investments are mainly stimulated to take place within main corridors. **Europe of the Flows is characterised by strong connections between cities and transport nodes that structure the European territory.** Political focus lies on issues such as enhancing connections and long distance networks and global integration.
According to Project Specifications:

This scenario provides an image of the European territory in which economic and population growth as well as public investments are mainly stimulated to take place within existing cities; cities that have a role as driving forces in the global, national and/or regional level. **Europe of the Cities is characterised by economically strong and compact cities that structure the European territory.** Political focus lies on issues such as intensified use of urban space, strong preservation of open space, reduction of long-distance traffic.
According to Project Specifications:

This scenario provides an image of the European territory in which economic and population growth as well as public investments mainly take place on the basis of specific regional identities and strengths. **Europe of the Regions is characterised by strong urban and rural territories that form a mosaic of different regions and types of territories with strong identities.** Political focus lies on issues such as regional self-reliance, small-scale development and landscape protection.
Scenarios France 2020 (DATAR, 2002)
Scenarios for Europe ESPON 3.2 (2006)
Scenarios Netherlands 2040 (SPB 2010)
<table>
<thead>
<tr>
<th>Scenario Study</th>
<th>Scenario Territorial Orientations</th>
</tr>
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<tbody>
<tr>
<td>ET2050 - Project Specifications</td>
<td>A Europe of Flows Promoting MEGAS</td>
</tr>
<tr>
<td>ET2050 - FIR</td>
<td>Global Flows</td>
</tr>
<tr>
<td>ESPON 3.2</td>
<td>Pro-Competitiveness</td>
</tr>
<tr>
<td>Netherlands 2040</td>
<td>Talent Towns</td>
</tr>
<tr>
<td>France 2020</td>
<td>Archipelago exploded</td>
</tr>
<tr>
<td>Territoires 2040</td>
<td>Postpolisation</td>
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<tr>
<td>PLUREL 2025</td>
<td>Fragmentation and High-tech</td>
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</table>
## Scenarios 2030: Main Assumptions

<table>
<thead>
<tr>
<th></th>
<th>A Scenario (Promoting MEGAS)</th>
<th>B Scenario (Promoting Cities)</th>
<th>C Scenario (Promoting Regions)</th>
<th>BASELINE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Demographic Policies</strong></td>
<td>Openness to migrants from outside Europe</td>
<td>Relative openness.</td>
<td>More strict immigration policies. Public support to natality and families.</td>
<td>Continuation of actual trends</td>
</tr>
<tr>
<td><strong>Fertility</strong></td>
<td>1,5 in 2030</td>
<td>1,66 in 2030</td>
<td>1,8 in 2030</td>
<td>1,66 in 2030</td>
</tr>
<tr>
<td><strong>Mortality</strong></td>
<td>For the initial 5-year period, between 2010 and 2015, mortality rates are assumed as the ones proposed by the “Limited Social Europe” (LSE) scenario for the 2015-2020 period (in the ESPON DEMIFER study). After 2015, life expectancy is linearly increased until the values of 85 years for men and 90 years for women in 2050.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ExtraEU Migration</strong></td>
<td>Total immigration increases at a rate of 3-7% every 5 years, substantially faster than in the Baseline.</td>
<td>Total immigration increases at a rate of 2-4.3% every 5 years, still faster than in the Baseline.</td>
<td>Total immigration decreases at a rate of 2% every 5 years</td>
<td>Total immigration increases at a rate of 2% every 5 years, with the increase being delayed by 5 years in the most crises-hit countries (CY, GR, IT, ES, PT, IE)</td>
</tr>
<tr>
<td><strong>IntraEU Migration between countries</strong></td>
<td>Flows tend to move from all over in Europe towards largest metropolises integrated in the global economy (regions type A)</td>
<td>Flows tend to move from rural and sparsely populated areas towards other areas in Europe (regions type B)</td>
<td>Flow from rural and sparsely populated areas towards other areas significantly decreases (regions type C)</td>
<td>Emigrating rates are kept constant as in pre-crisis times for leading economies in Europe (based on MIMOSA and IMEM studies), and are significantly increased for least performing economies</td>
</tr>
<tr>
<td><strong>Monetary policies</strong></td>
<td>In Western European countries, stability of interest rates, ULC, exchange rates, inflation; Progressive convergence of Eastern EU towards Western European Countries values</td>
<td>Decrease of interest on bonds: end of speculation periods</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fiscal policies</strong></td>
<td>Slow tendency towards stability pact: 60% of Debt/GDP. Decrease of public expenditure growth rate especially in vicious countries.</td>
<td>Debt/GDP remains constant</td>
<td>Slow divergence from stability pact. Slight increase of public expenditure growth rate</td>
<td>Increase of tax rates in the Western and Eastern Countries. Debt/GDP remains constant</td>
</tr>
<tr>
<td><strong>Macro-economic framework</strong></td>
<td>The crisis ends in 2015</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Scenarios 2030: Main Results Aggregated

<table>
<thead>
<tr>
<th>Transport Infrastructure Policies</th>
<th>€ 1.630 billion (2013-2030) in transport investment, 0.60% of EU GDP. 50% of transport budget in new infrastructure provision. Modal allocation of investment in TENs, substantially increased for air and ports, substantially decreased for rail. Investments in long-distance infrastructure (mostly in regions type A) are 20% of total transport budget (€ 330 billion 2013-2030). 30% for short distance.</th>
<th>€ 2.290 billion (2013-2030) in transport investment, 0.85% of EU GDP. 60% of transport budget in new infrastructure provision. Modal allocation of investment in TENs, increasingly rail based. Investments in long-distance infrastructure (mostly on regions type B) are 18% of total transport budget (€ 470 billion 2013-2030). 42% for short-distance.</th>
<th>€ 1.790 billion (2013-2030) in transport investment, 0.67% of EU GDP. 45% of transport budget in new infrastructure provision, 25% allocated in TENs (€ 160 billion). Investments in short-distance infrastructure (mostly in regions type C) are 34% of total transport budget (€ 160 billion 2013-2030). 11% for long-distance.</th>
<th>From 1.04% of EU GDP in transport investment to 0.73%. New transport provision from 70% to 53% of total transport investment. Network maintenance from 30% to 45%. Investments in long-distance infrastructure, from 28% (€ 610 billion 1995-2012) to 17% (€ 330 billion 2013-2030).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport Market Regulation Policies</td>
<td>0.07% of EU GDP yearly in smart ITS infrastructure equipment -10% vehicle emission factors respect to Baseline, due to environmental regulation Pricing in those motorways were there are no tolls today Increased efficiency of</td>
<td>0.02% of EU GDP yearly in smart ITS infrastructure equipment More 10% average rail speed due to enhanced management -10% vehicle emission factors respect to Baseline, due to environmental regulation High development of</td>
<td>0.04% of EU GDP yearly in smart ITS infrastructure equipment +5% average rail speed due to enhanced management -5% average road speeds due to regulation -20% vehicle emission factors respect to Baseline, due to environmental regulation</td>
<td>0.02% of EU GDP yearly in smart ITS infrastructure equipment Car emission factors in 2030 a 30% lower than in 2010, with development of new technologies and driven by Euro Standard regulations Fossil fuels remain important. Emissions reduced but targets are not</td>
</tr>
</tbody>
</table>
Scenarios 2030: Cohesion Policies
Scenarios 2030: Transport Policies

European Transport Investments 2013 - 2030
Measured as Investment per area (millions €/km²)

SCENARIO A 2030, Transport Investments in TENs (maintenance excluded)
Budget allocated to each NUTS2 represented in Million Euros per km², Accumulated 2013-2030

- 0.00
- 0.01 - 0.06
- 0.06 - 0.09
- 0.10 - 0.19
- 0.20 - 4.57

BASELINE 2030, Transport Investments in TENs (maintenance excluded)
Budget allocated to each NUTS2 represented in Million Euros per km², Accumulated 2013-2030

- 0.00
- 0.01 - 0.03
- 0.04 - 0.06
- 0.09 - 0.17
- 0.18 - 4.73
Scenarios 2030: Transport Policies

European Transport Investments 2013 - 2030
Measured as Investment per area (millions €/km²)

SCENARIO B 2030. Transport Investments in TENs (maintenance excluded)
Budget allocated to each NUTS2 represented in Million Euros per km². Accumulated 2013-2030

SCENARIO C 2030. Transport Investments in TENs (maintenance excluded)
Budget allocated to each NUTS2 represented in Million Euros per km². Accumulated 2013-2030
## Scenarios 2030: Main Results Aggregated

<table>
<thead>
<tr>
<th>Parameter</th>
<th>A Scenario (Promoting MEGAS)</th>
<th>B Scenario (Promoting Cities)</th>
<th>C Scenario (Promoting Regions)</th>
<th>BASELINE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total EU31 Population in 2030</strong> (in millions; 514 million in 2010)</td>
<td>527.7</td>
<td>530.8</td>
<td>531.6</td>
<td>530.2</td>
</tr>
<tr>
<td><strong>Total Migrations 2010-2030</strong> (cumulated number of migrants in millions)</td>
<td>39.6</td>
<td>38.8</td>
<td>37.2</td>
<td>37.9</td>
</tr>
<tr>
<td><strong>Economic Growth</strong> (average yearly increase 2010-2030)</td>
<td>+2.22%</td>
<td>+2.31%</td>
<td>+1.82%</td>
<td>+1.89%</td>
</tr>
<tr>
<td><strong>Regional Divergence</strong> (GINI coefficient in 2030; 26.1 in 2008)</td>
<td>28.0</td>
<td>28.2</td>
<td>28.3</td>
<td>28.5</td>
</tr>
<tr>
<td><strong>Total Employment</strong> (average yearly increase 2010-2030)</td>
<td>+1.92%</td>
<td>+1.96%</td>
<td>+1.55%</td>
<td>+1.59%</td>
</tr>
<tr>
<td><strong>Manufacturing Employment</strong> (average yearly increase 2010-2030)</td>
<td>+2.12%</td>
<td>+1.66%</td>
<td>+1.08%</td>
<td>+1.38%</td>
</tr>
<tr>
<td><strong>Service Employment</strong> (average yearly increase 2010-2030)</td>
<td>+1.86%</td>
<td>+2.04%</td>
<td>+1.67%</td>
<td>+1.63%</td>
</tr>
<tr>
<td><strong>Total transport demand for passengers</strong> (total pax·km increase 2010-2030 in %)</td>
<td>+34.3%</td>
<td>+34.8%</td>
<td>+31.6%</td>
<td>+39.0%</td>
</tr>
<tr>
<td><strong>Total travel cost</strong> (total euros increase 2010-2030 in %)</td>
<td>+29.7%</td>
<td>+34.9%</td>
<td>+29.0%</td>
<td>+39.3%</td>
</tr>
<tr>
<td><strong>Total time spent travelling</strong> (total hours increase 2010-2030 in %)</td>
<td>+23.3%</td>
<td>+34.5%</td>
<td>+32.1%</td>
<td>+41.0%</td>
</tr>
<tr>
<td><strong>Total CO2 due to transport</strong> (total tones increase 2010-2030 in %)</td>
<td>-40.3%</td>
<td>-58.4%</td>
<td>-35.4%</td>
<td>-25.2%</td>
</tr>
<tr>
<td><strong>Total CO2</strong> (total tones increase 2010-2030 in %)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>-28.9%</td>
</tr>
</tbody>
</table>
## Scenarios 2030: Main Results Agregated

<table>
<thead>
<tr>
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<th>C Scenario (Promoting Regions)</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Population</strong> (total demographics)</td>
<td>↑</td>
<td>↑</td>
<td>↑</td>
<td>↑</td>
</tr>
<tr>
<td><strong>Society</strong> (inequities)</td>
<td>↑</td>
<td>↑</td>
<td>↑</td>
<td>↑</td>
</tr>
<tr>
<td><strong>Economy</strong> (economic performance)</td>
<td>↑</td>
<td>↑</td>
<td>↑</td>
<td>↑</td>
</tr>
<tr>
<td><strong>Technology</strong> (innovation)</td>
<td>↑</td>
<td>↑</td>
<td>↓</td>
<td>↔</td>
</tr>
<tr>
<td><strong>Energy</strong> (total consumption)</td>
<td>↑</td>
<td>↑</td>
<td>↓</td>
<td>↑</td>
</tr>
<tr>
<td><strong>Transport</strong> (total traffics)</td>
<td>↑</td>
<td>↑</td>
<td>↑</td>
<td>↑</td>
</tr>
<tr>
<td><strong>Land-Uses</strong> (artificial land occupation)</td>
<td>↑</td>
<td>↑</td>
<td>↓</td>
<td>↑</td>
</tr>
<tr>
<td><strong>Environment</strong> (climate change progression)</td>
<td>↓</td>
<td>↓</td>
<td>↓</td>
<td>↑</td>
</tr>
<tr>
<td><strong>Governance</strong> (participative governance)</td>
<td>↓</td>
<td>↓</td>
<td>↑</td>
<td>↓</td>
</tr>
</tbody>
</table>
Scenarios 2030: Total Population

Total Population 2010 - 2030 (Baseline)
Measured as annual average population growth rate along the period.

Total Population 2030 (Scenario A)
Measured as population relative difference respect to Baseline.

Population relative change (Units: %)
Results obtained by MULTIPOLES forecast model
- < -0.5%
- 0% - 0.5%
- 0% - 0.5%
- 0% - 1%
- > 1%
- No data (ESPON space)

Total Population 2030, relative change Population Scenario A / Population Baseline (Units: %)
Results obtained by MULTIPOLES forecast model
- < -2%
- 0% - 2%
- > 2%
- No data (ESPON space)

MULTIPOLES: a cohort-component population dynamics model. It is used for the simulations of complex hierarchical multiregional, multi-country population systems, for analysing impact of various scenarios concerning migration, fertility, and mortality.

European population growth will tend towards stabilisation. Total population (ESPON Space) will grow from 514 million in 2010 to 526 million in 2030.

MULTIPOLES a cohort-component population dynamics model. It is used for the simulations of complex hierarchical multiregional, multi-country population systems, for analysing impact of various scenarios concerning migration, fertility, and mortality.
Scenarios 2030: Total Population

**Total Population 2030 (Scenario B)**
Measured as population relative difference respect to Baseline

**Total Population 2030 (Scenario C)**
Measured as population relative difference respect to Baseline

Results obtained by MULTIPOLES forecast model
- < 0%
- 0% - 2%
- > 2%
- No data (ESPON space)

MULTIPOLES a cohort-component population dynamics model. It is used for the simulations of complex hierarchical multiregional, multi-country population systems, for analysing impact of various scenarios concerning migration, fertility, and mortality.
Scenarios 2030: Net Migration

Net Migration 2010 - 2030 (Baseline)
Measured as annual net migration along the period

Migration 2010 - 2030 (Scenario A)
Measured as relative difference in total net migration respect to Baseline

Annual Net Migration (Units: Persons)
Results obtained by MULTIPOLES forecast model
- <5000
- 6660 – 0
- 0 – 5000
- 5000 - 10000
- >10000
- No data (ESPON space)

East-West migration increases, as well as from rural to large metropolises regions. Total migration increases up to 20 millions. MULTIPOLES a cohort-component population dynamics model projection of migration flows are based on labour markets assumptions. Residential tourism of Northern Europeans remain, for instance, in Southern regions is not considered.

Total Migration 2010 - 2030. (Migration Scenario A - Migration Baseline) / Pop2010 (Units: %)
Results obtained by MULTIPOLES forecast model
- < -1.5%
- -1.5% - 0%
- 0% - 1.5%
- 1.5% - 3%
- > 3%
- No data (ESPON space)
- No data (No ESPON space)
Scenarios 2030: Net Migration

Total Migration 2010 - 2030 (Scenario B)
Measured as relative difference in total net migration respect to Baseline

Results obtained by MULTIPOLES forecast model

-1.5% - 0%
0% - 1.5%
1.5% - 3%
No data (ESPON space)
No data (No ESPON space)

MULTIPOLES is a cohort-component population dynamics model projection of migration flows are based on labour market assumptions. Residential tourism of Northern Europeans retirees, for instance, in Southern regions is not considered.
Scenarios 2030: GDP Growth

GDP Growth 2010 - 2030 (Baseline)
Measured as annual average GDP growth rate along the period

GDP Growth 2030 (Scenario A)
Measured as relative difference in average GDP growth rate respect to Baseline

GDP Growth annual average rate (Units: %)
Results obtained by MASST3 forecast model
- < 0%
- 0% - 0,6%
- 0,5% - 1%
- 1% - 1,5%
- 1,5% - 2%
- > 2%
- No data (ESPON space)

Economic growth at very different speeds, leading to an increase in inter-regional economic disparities. Number of regions below 1% of GDP growth: 46 (11%). ESPON Space annual average GDP growth rate 1,0%.
MASST3 is an econometric, macroeconomic, sectoral, social and territorial model. It has been upgraded to explicitly take into account the impact of the current economic crisis.

GDP Growth 2030, relative change GDP Scenario A - GDP Scenario Baseline (Units: %)
Results obtained by MASST3 forecast model
- < 0%
- 0% - 0,1%
- 0,1% - 0,2%
- 0,2% - 0,3%
- 0,3% - 0,4%
- > 0,4%
- No data (ESPON space)

MASST3 is an econometric, macroeconomic, sectoral, social and territorial model. It has been upgraded to explicitly take into account the impact of the current economic crisis.
Scenarios 2030: GDP Growth

GDP Growth 2030 (Scenario B)
Measured as relative difference in average GDP growth rate respect to Baseline

GDP Growth 2030 (Scenario C)
Measured as relative difference in average GDP growth rate respect to Baseline

GDP Growth 2030, relative change GDP Scenario B - GDP Scenario Baseline (Units: %)
Results obtained by MASST3 forecast model
- < 0%
- 0% - 0.1%
- 0.1% - 0.2%
- 0.2% - 0.3%
- 0.3% - 0.4%
- > 0.4%
No data (ESPON space)

GDP Growth 2030, relative change GDP Scenario C - GDP Scenario Baseline (Units: %)
Results obtained by MASST3 forecast model
- < 0%
- 0% - 0.1%
- 0.1% - 0.2%
- 0.2% - 0.3%
- 0.3% - 0.4%
- > 0.4%
No data (ESPON space)
Scenarios 2030: Employment

Employment 2010 - 2030 (Baseline)
Measured as annual average employment growth rate

Employment 2030 (Scenario A)
Measured as relative difference on average employment growth rate

Employment growth annual average rate (Units: %)
Results obtained by MASST3 forecast model
- < 1%
- 1% - 1.5%
- 1.5% - 2%
- > 2%
- No data (ESPON space)
- No data (No ESPON space)

Employment grows at a sustained rate in Europe, meaning that large part of the recovery from the crisis comes from job creation and lower salaries, instead of productivity gains. (ESPON Space annual average employment growth rate 1.5%) MASST3 is an econometric, macroeconomic, sectoral, social and territorial model. It has been upgraded to explicitly take into account the impact of the current economic crisis.

Employment 2030: Scenario A Annual Growth - Baseline Annual Growth (Units: %)
Results obtained by MASST3 forecast model
- < 0.2%
- 0.2% - 0.3%
- 0.3% - 0.4%
- > 0.4%
- No data (ESPON space)
- No data (No ESPON space)

MASST3 is an econometric, macroeconomic, sectoral, social and territorial model. It has been upgraded to explicitly take into account the impact of the current economic crisis.
Scenarios 2030: Employment in Manufacturing

Service and manufacturing employment 2010 - 2030 (Baseline)
Measured as annual average employment growth rate related to EU average growth rate

Service and manufacturing employment 2010 - 2030 (Scenario A)
Measured as annual average employment growth rate related to EU average growth rate

Service and manufacturing employment growth
Results obtained by MASST3 forecast model
- Both rates below to EU average
- Manufacturing employment growth rate over to EU average
- Service employment growth rate over to EU average
- Both rates over to EU average
- No data (ESPON space)
- No data (No ESPON space)

Manufacturing employment grows at similar rates that services, in a reindustrialisation process. ESPON space annual average of manufacturing employment growth is 1.69% and annual average of services employment growth is 1.68%.

MASST3 is an econometric, macroeconomic, sectoral, social and territorial model. It has been upgraded to explicitly take into account the impact of the current economic crisis.
Scenarios 2030: Employment in Manufacturing

Service and manufacturing employment 2010 - 2030 (Scenario B) Service and manufacturing employment 2010 - 2030 (Scenario C)
Measured as annual average employment growth rate related to EU average growth rate

Service and manufacturing employment growth
Results obtained by MASST3 forecast model
- Both rates below to EU average
- Manufacturing employment growth rate over to EU average
- Service employment growth rate over to EU average
- Both rates over to EU average
- No data (ESPON space)
- No data (No ESPON space)

MASST3 is an econometric, macroeconomic, sectoral, social and territorial model. It has been upgraded to explicitly take into account the impact of the current economic crisis.

Service and manufacturing employment growth
Results obtained by MASST3 forecast model
- Both rates below to EU average
- Manufacturing employment growth rate over to EU average
- Service employment growth rate over to EU average
- Both rates over to EU average
- No data (ESPON space)
- No data (No ESPON space)

MASST3 is an econometric, macroeconomic, sectoral, social and territorial model. It has been upgraded to explicitly take into account the impact of the current economic crisis.
Scenarios 2030: Global Accessibility

Global Accessibility 2010 - 2030 (Baseline)
Measured as potential intercontinental airplane seats and containers in relation to EU average.

Passengers and Freight Global Accessibility
- Green: Passengers and Freight accessibility are expected to increase below EU average.
- White: Passengers accessibility is expected to increase over EU average.
- Purple: Freight accessibility is expected to increase over EU average.
- Dark purple: Passengers and Freight accessibility are expected to increase over EU average.
- Red: No data (ESPO space).

Global accessibility will increase around transport nodes: intercontinental airports and major ports.

Global Accessibility 2010 - 2030 (Scenario A)
Measured as potential intercontinental airplane seats and containers in relation to EU average.

Passengers and Freight Global Accessibility
- Green: Passengers and Freight accessibility are expected to increase below EU average.
- White: Passengers accessibility is expected to increase over EU average.
- Purple: Freight accessibility is expected to increase over EU average.
- Dark purple: Passengers and Freight accessibility are expected to increase over EU average.
- Red: No data (ESPO space).
- Grey: No data (No ESPON space).
Scenarios 2030: Global Accessibility

Global Accessibility 2010 - 2030 (Scenario B)
Measured as potential intercontinental airplane seats and containers in relation EU average

Passengers and Freight Global Accessibility
- Passengers and freight accessibility are expected to increase below EU average
- Passengers’ accessibility is expected to decrease over EU average
- Freight accessibility is expected to increase over EU average
- No data (ESPSN space)
- No value (No ESPON space)

Global Accessibility 2010 - 2030 (Scenario C)
Measured as potential intercontinental airplane seats and containers in relation EU average

Passengers and Freight Global Accessibility
- Passengers and freight accessibility are expected to increase below EU average
- Passengers’ accessibility is expected to increase over EU average
- Freight accessibility is expected to increase over EU average
- No data (ESPSN space)
- No value (No ESPON space)
Scenarios 2030: European Accessibility

European Accessibility 2010 - 2030 (Baseline)
Measured as change in accessible population weighed by shortest access time

European Accessibility 2030 (Scenario A)
Measured as relative difference in accessible population weighed by shortest access time respect to Baseline

Absolute variation in accessibility 2010-2030 (Units: Millions Equivalent population)
- < 0
- 1 - 5
- 5 - 25
- 25 - 50
- > 50

Accessibility changes are very much influenced by population changes, because of the relative homogeneous transport undertow across Europe, and despite the relatively higher investments on infrastructure planned in Eastern European regions.

Accessibility 2030, relative change Accessibility ScenarioA/ Accessibility Baseline (Units: %)
- < 0%
- 0% - 0.5%
- 0.5% - 1%
- 1% - 1.5%
- > 1.5%

Accessibility changes are very much influenced by population changes, because of the relative homogeneous transport undertow across Europe, and despite the relatively higher investments on infrastructure planned in Eastern European regions. The accessibility in each NUTS3 is measured as the sum of the population of all other NUTS3 weighted by the shortest multimodal access time. NUTS3 population is attached to the capital city. Population in 2030 by MULTIPOLS-MASST models and shortest multimodal access by MOSAIC model.
Scenarios 2030: European Accessibility

**European Accessibility 2030 (Scenario B)**
Measured as relative difference in accessible population weighed by shortest access time respect to Baseline

**European Accessibility 2030 (Scenario C)**
Measured as relative difference in accessible population weighed by shortest access time respect to Baseline

Accessibility changes are very much influenced by population changes, because of the relative homogeneous transport endowment across Europe, and despite the relatively higher investments on infrastructure planned in Eastern European regions. The accessibility in each NUTS3 is measured as the sum of the population of all other NUTS3 weighted by the shortest multimodal access time. NUTS3 population is attached to the capital city. Population in 2030 by MULTIPoles-MASST models and shortest multimodal access by MOSAIC model.
Scenarios 2030: CO2 emissions due to transport

CO2 Transport Emissions 2010 - 2030 (Baseline)
Measured as saving potential emissions due to transport

CO2 Transport Emissions 2030 (Scenario A)
Measured as relative change in saving potential emissions due to transport respect to Baseline

CO2 Transport emissions (Units: Millions of CO2 tonnes saved)
Results obtained by MOSAIC Model

- < -100
- -100 - 60
- -50 - 0
- 0 - 50
- > 50
- No data (ESPON space)
- No data (No ESPON space)

CO2 emissions, relative change Emissions Scenario A / Emissions Baseline (Units: %)
Results obtained by MOSAIC Model

- < -10%
- -10% - 6%
- -5% - 0%
- 0% - 5%
- > 5%
- No data (ESPON space)
- No data (No ESPON space)

Reduction of 10% of Transport CO2 emissions. The combined impact of economic crisis with reduced GDP growth, and the use of more environmentally friendly energy sources leads to a net reduction of CO2 emissions specially in more industrialized and populated regions. Results are based on assumptions based on transport traffic forecast by MOSAIC as well as in other economic sectors.
Scenarios 2030: CO2 emissions due to transport

CO2 Transport Emissions 2030 (Scenario B)
Measured as relative change in saving potential emissions due to transport respect to Baseline

CO2 Transport Emissions 2030 (Scenario C)
Measured as relative change in saving potential emissions due to transport respect to Baseline

CO2 emissions, relative change Emissions Scenario B / Emissions Baseline (Units: %)
Results obtained by MOSAIC Model

Results are based on assumptions based on transport traffic forecasted by MOSAIC as well as in other economic sectors.

CO2 emissions, relative change Emissions Scenario C / Emissions Baseline (Units: %)
Results obtained by MOSAIC Model

Results are based on assumptions based on transport traffic forecasted by MOSAIC as well as in other economic sectors.
European Territorial Scenarios 2050
## Scenarios 2050: General Specifications

<table>
<thead>
<tr>
<th>Year</th>
<th>Population EU27 (million)</th>
<th>Population EU31 (million)</th>
<th>GDP EU27 (billion € of 2010)</th>
<th>GDP EU31 (billion € of 2010)</th>
<th>Annual net migration EU27 (1,000)</th>
<th>Annual Structural Funds (billion € of 2010)</th>
<th>Oil price per barrel (€ of 2010)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981</td>
<td>459.8</td>
<td>470.5</td>
<td>7,067</td>
<td>7,472</td>
<td>77</td>
<td>5.0</td>
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<td>1986</td>
<td>464.3</td>
<td>475.2</td>
<td>8,073</td>
<td>8,524</td>
<td>285</td>
<td>8.2</td>
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<td>1991</td>
<td>471.4</td>
<td>482.7</td>
<td>9,534</td>
<td>10,037</td>
<td>1078</td>
<td>17.8</td>
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<td>1996</td>
<td>478.1</td>
<td>489.7</td>
<td>10,334</td>
<td>10,875</td>
<td>748</td>
<td>34.7</td>
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<tr>
<td>2001</td>
<td>482.1</td>
<td>494.1</td>
<td>11,710</td>
<td>12,251</td>
<td>654</td>
<td>37.6</td>
<td>25</td>
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<td>2006</td>
<td>491.2</td>
<td>503.6</td>
<td>12,751</td>
<td>13,329</td>
<td>1578</td>
<td>48.2</td>
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<tr>
<td>2011</td>
<td>500.6</td>
<td>513.6</td>
<td>12,596</td>
<td>13,158</td>
<td>857</td>
<td>50.3</td>
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<td>2016</td>
<td>514.1</td>
<td>527.7</td>
<td>13,370</td>
<td>14,009</td>
<td>1239</td>
<td>55.4</td>
<td>90</td>
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<td>2021</td>
<td>526.0</td>
<td>540.0</td>
<td>14,548</td>
<td>15,207</td>
<td>1327</td>
<td>60.2</td>
<td>96</td>
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<tr>
<td>2026</td>
<td>534.8</td>
<td>549.3</td>
<td>15,774</td>
<td>16,487</td>
<td>1300</td>
<td>65.4</td>
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<tr>
<td>2031</td>
<td>540.7</td>
<td>555.6</td>
<td>16,903</td>
<td>17,668</td>
<td>1290</td>
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<tr>
<td>2036</td>
<td>542.4</td>
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<td>18,952</td>
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<td>75.6</td>
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<tr>
<td>2041</td>
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<td>21,718</td>
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<tr>
<td>2051</td>
<td>526.0</td>
<td>541.7</td>
<td>22,251</td>
<td>23,268</td>
<td>1094</td>
<td>92.6</td>
<td>133</td>
</tr>
</tbody>
</table>
Scenarios 2050: Cohesion Policies

The graph shows the projected EU Cohesion policy expenditures (billion Euro of 2010) from 1995 to 2050. The data trends are represented by different lines:

- **Scenario A**: A baseline projection showing a steady increase in expenditure over time.
- **Scenario B**: A scenario with moderate increases, indicating a gradual rise in expenditure.
- **Scenario C**: A scenario with high expenditure growth, showing a steep rise by 2050.

The graph includes a data line for comparison, highlighting the divergence between actual data and projected scenarios.
Scenarios 2050: Structural Fund Subsidies

Structural Fund Subsidies (Scenarios A, B and C)
Measured as per cent of the total volume of Structural Fund Subsidies

Subsidies allocated to each region expressed in % of the total Structural Funds
Results obtained by SASI Exploratory Scenarios
- Scenario A: 1.0% of EU27 Structural Funds
- Scenario B: 0.5% of EU27 Structural Funds
- Scenario C: 0.25% of EU27 Structural Funds
## Scenarios 2050: Main Results

<table>
<thead>
<tr>
<th>Period</th>
<th>GDP</th>
<th>GDP per capita</th>
<th>GDP per capita</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Base</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>1981-2008</td>
<td>+2.22</td>
<td>+2.22</td>
<td>+2.22</td>
</tr>
<tr>
<td>2008-2013</td>
<td>−0.39</td>
<td>−0.39</td>
<td>−0.39</td>
</tr>
<tr>
<td>2013-2031</td>
<td>+1.60</td>
<td>+1.72</td>
<td>+1.66</td>
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<tr>
<td>2031-2051</td>
<td>+1.39</td>
<td>+1.41</td>
<td>+1.40</td>
</tr>
</tbody>
</table>
Baseline 2050: GDP per capital results

GDP per capita 2051 (Baseline)
Measured as € of 2010

GDP per capita (Units: € of 2010)
Results obtained by SASI forecast model
- < 15000
- 15000 - 20000
- 20000 - 30000
- 30000 - 40000
- 40000 - 50000
- > 50000
- No data (ESPON space)
Baseline 2050: Growth 2010-2050

GDP Growth 2010 - 2051 (Baseline)
Measured as annual average GDP growth rate along the period

This map does not necessarily reflect the opinion of the ESPON Monitoring Committee

GDP Growth annual average rate (Units: %)
Results obtained by SASI forecast model
- 0.5%
- 0.6% - 1%
- 1.1% - 1.5%
- 1.6% - 2%
- 2.1% - 3.3%
- No data (ESPON space)
- No data (No ESPON space)
Scenarios 2050: Relative Differences

GDP per capita 2051 (Scenario A)
Measured as relative change of GDP per capita respect to Baseline

GDP per capita 2051 (Scenario B)
Measured as relative change of GDP per capita respect to Baseline

GDP 2051, relative change in GDP per capita Scenario A / Baseline (Units: %)
Results obtained by SASI forecast model
- < -5%
- -5% - -2.5%
- -2.5% - 0%
- 0% - 2.5%
- 2.5% - 5%
- > 5%
- No data (ESPON space)
- No data (Non ESPON space)

GDP 2051, relative change in GDP per capita Scenario B / Baseline (Units: %)
Results obtained by SASI forecast model
- < -5%
- -5% - -2.5%
- -2.5% - 0%
- 0% - 2.5%
- 2.5% - 5%
- > 5%
- No data (ESPON space)
- No data (Non ESPON space)
Scenarios 2050: Relative Differences

GDP per capita 2051 (Scenario C)
Measured as relative change of GDP per capita respect to Baseline

GDP 2051, relative change in GDP per capita Scenario C / Baseline (Units: %)
Results obtained by GASi forecast model

- < -5%
- -5% - -2.5%
- -2.5% - 0%
- 0% - 2.5%
- 2.5% - 5%
- > 5%
- No data (ESPON space)
- No data (No ESPON space)
Change in the Economic Convergence process

- **SASI BASELINE 2008-2050**
- **A (Multipoles+MASST)**
- **C (Multipoles+MASST)**
- **BASELINE (Multipoles+MASST)** with continuation of 1985-2008 trend
Cohesion and Structural Funds 2000-06

Data source: DG Regio study on regional ERDF and CF expenditure, based on national and European sources

Data source (for map): GISCO database © EuroGeographics for the administrative boundaries

SWECO EUROFUTURES
Eurofutures Finland 2008

Total ERDF and CF commitment 2000-06, mill. Euro:

Total ERDF and CF commitment (%) by 1-digit expenditure category:

- Basic infrastructure
- Productive environment
- Human resources

NUTS level 2 (Germany: NUTS level 2)

* Excluding data for expenditure category "miscellaneous"

Geographic scale values for the outliers/territories
"The problem regarding Cohesion policy is that there are very few instruments to measure the impact of the investment," said Claire Dheret of the European Policy Centre, a Brussels-based think tank.

But, says Danuta Huebner, referring to her native Poland, an EU member since 2004: "It is a different country now. That's all thanks to European contributions"
“Too seek Europe, is to make it! Europe exists through its search for the infinit -and this is what I call adventure”

Zygmunt Bauman, “An Adventure called Europe”