



43RD ASECAP STUDY & INFORMATION DAYS 2015

A Multimodal, Smart and Safe European Transport System: The Key Role of Motorways

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Autostrada del Brennero SpA is preparing itself for the application of the «user pays» and «polluter pays» principles

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CEO A22*

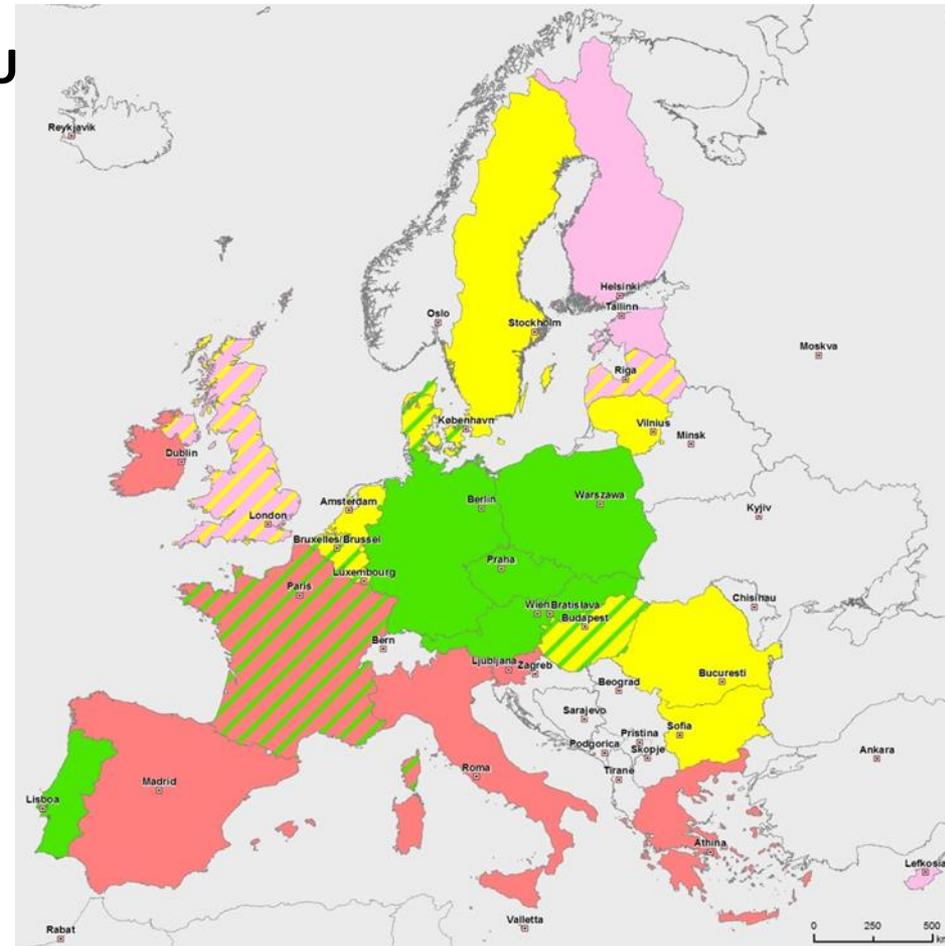




OVERVIEW / STATUS

Charging of heavy goods vehicles in the EU

-  Vignette (time-based charge)
-  Electronic network-wide toll (distance-based charge)
-  Toll with physical barriers (distance-based charge)
-  Neither vignettes nor tolls
-  Vignette (time-based charge) under preparation
-  Electronic network-wide toll (distance-based charge) under preparation



OVERVIEW / STATUS

Total length: 314 km

Height difference covered: from 50 to 1375 m.

Intersections with other motorways:
Brenner Autobahn (A13 - Austria), A4 ed A1

Motorway Stations: 23 + Brenner barrier

Overpasses: 144

Tunnels: 30 one way

Service Areas: 22

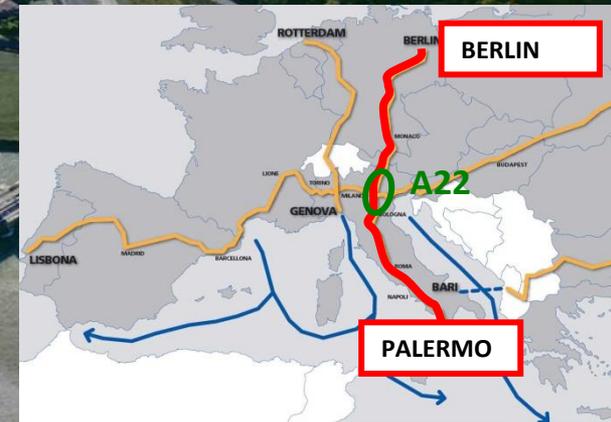
Average daily traffic
39.000 vehicles
on both carriageways

Transited vehicles 2014:

64.777.449

Heavy goods vehicles 2014:

7.529.450 (11,6%)



OVERVIEW / STATUS

A22 on request of the crossed territories (Autonomous Province of Bolzano) is preparing itself with a **stepwise approach** to be ready for **adoption of Directive 2011/76/EU**

The resulting analysis invests a **complete revision** of the **A22 toll collection system**, where necessary.

The current toll collection system adopted by A22 was developed in 1995 in response to the need for a radical technical overhaul of the system which was not compatible with the Telepass collection system.



Thorough review of the architecture of the lane in order to manage real-time events characterized by the need for large computing power to service rapid and random events.

OVERVIEW / STATUS

The A22 Toll Collection system is in all its hardware and software components, a highly specialized and customized computer/remote communication system. It's a unique system designed and produced exclusively for Autostrada del Brennero.



maximum autonomy for:

- the implementation of technology
- choice of system components
- functions flexibility
- independence in negotiations

OVERVIEW / STATUS

Over the years the original system was significantly modified through the gradual addition of new features:

- the introduction of remote lane monitoring;
- implementation of contactless payment technology using RF antenna (study/prototype stage);
- deployment of hardware and software for payment via automatic cash machines (integration of 32 cash machines along the A22 route).



OVERVIEW / STATUS

Several projects are currently underway:

- ❑ **design and implementation of a toll collection system** - completely new in terms of its hardware components and software management (3 new type gates will be installed, starting with a gate dedicated to only electronic toll users, followed by an automatic gate plus electronic toll payment and a gate with all current toll collection systems).
- ❑ **further extension** of the availability of **EETS** – (European Electronic Toll Service – EETS) ready toll lanes;
- ❑ introduction of the «**correct track**»



installation of new cameras with automatic license plate number recognition on all entry lanes; portals before and after interconnections equipped with radio – frequency antennas



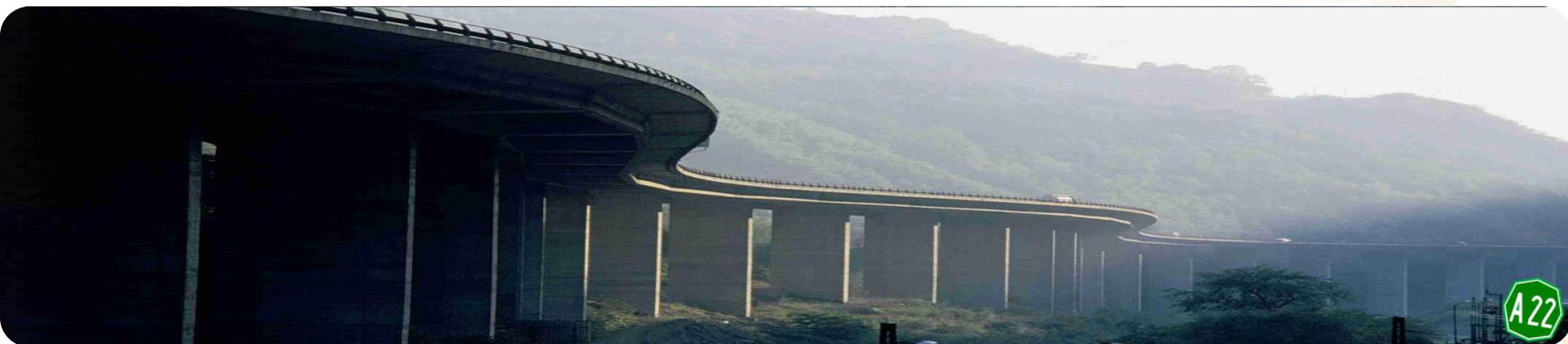
OVERVIEW / STATUS

The promotion of **sustainable transport** is a **key element** of the **common transport policy**

- reduction of the negative impacts of transport;
- optimising the transport system, using a variety of instruments to improve transport infrastructure and the use of technologies;
- enabling a more efficient management of transport demand (more efficient use of infrastructures and co-modality);



Recourse to the «**user pays**» and «**polluter pays**» principles



Tolling Policy/European Commission

Official Journal of the Italian Republic n. 69, March 2014 transposing **EU Directive 2011/76 (Eurovignette law)** which amended **Directive 1999/62/EU** on the taxation of HGV.

In 1999 the **EU Directive (99/62/EU)** regulated HGV taxes, tolls and charges on the entire trans European road network. It aimed to reduce discrimination and barriers to trade by insuring similar conditions across the internal market. The **directive allows** two types of **payment** of a «**user charge**» and «**kilometer based tolls**».

Tolling Policy/European Commission

In addition to the taxes required by the Directive, Member States may apply:

- taxes or charges levied at the time of registration of the vehicle or imposed on vehicles or loads of weight or size out of the norm;
- specific parking fees and charges related to urban circulation;
- charges intended to combat road congestion.

Member States that introduce electronic toll collection **cooperate** to ensure that their systems are **interoperable**



Each Member State that introduces new electronic toll collection system must see to it that this system is able to automatically handle issues arising the correct attribution of the toll based on new parameters introduced by the Directive.

Tolling Policy/European Commission

Directive 2011/76/EU – step towards a more balanced approach, taking into account the importance of the sector of heavy transport goods by road to the EU economy and the need to tackle its related negative environmental impact.

News regarding the composition of tariffs and environmental protection (Decree 43 - March 2014):

- ❖ the imposition of tolls linked in previous versions of the EU directive to use (principle of «who uses, pays») of the infrastructure, is now also an element in the **relationship between use and environmental damage** (principle of «who pollutes more, pays more»);
- ❖ the infrastructure charges considered for the tariff purposes, based on the principle of cost recovery (construction costs, operating costs, maintenance and development of the infrastructure network) may also include a return of capital and a profit margin, based on market conditions;
- ❖ the new tariffs will apply to vehicles with a gross vehicle weight exceeding 3,5 tons and may also include external costs (related to pollution (atmospheric, acoustic or due to traffic)).

Charges for the external costs related to air pollution from traffic shall not apply to vehicles complying with the more stringent EURO emission standards until four years after the dates of application of the provisions that have introduced such rules.

Challenges

With the entering into force of Directive 2011/76/EU (the Eurovignette Directive) European transport policy has entered a new stage:

- ❑ it gives the option to charge heavy goods vehicles for the costs of air and noise pollution they generate;
- ❑ the revenue generated from the mark – up (external costs) will be earmarked by the government for improving the transport infrastructure and the traffic conditions (financing projects for alternative transport infrastructure, innovative clean transport systems or safe parking areas) in the same road section on which the mark-up is applied;
- ❑ those costs should be identified separately on a statement bill/equivalent document provided by the toll operator, making the user aware of such costs (environmental damage).

Challenges

A wider **differentiation of toll rates** according to **the time of road use** allows road operators to:

- better manage the traffic with **smarter route planning**
 - **more efficient logistics,**
 - **a shift to cleaner, quieter lorries,**
 - **fewer km driven**
 - **reduced congestion**
- in contrast to the benefits of transport, the **costs of the environmental impact** are generally **not borne** by the **transport users**
- the **internalization of external costs** means making such effects **part of the decision making process of transport users**
- the aim of **internalization** is to **bridge the gap** between the **users' costs** and the **social costs** of these trips

Challenges

The main attributes to consider are:

- ✓ **Euro class** of the vehicle according to Directives (88/77/EEC, 1/542/EEC, 96/1/EC, 1999/96/EC, 2001/27/EC)
- ✓ **Carbon dioxide emissions** according to Directive 003/127/EC

Each transit can be «re-priced» based on predetermined conditions, for example:

- ✓ **+ 0%** for the hours **from 22.00 to 6.00**
- ✓ **+ 20%** for the hours **from 8.00 to 10.00**
- ✓ ...and so on

Analysis phase

Analysis phase of the «Eurovignette in A22» project :

The **correct application** of the **Directive** and the **input of local authorities** require complete knowledge of data on transit vehicles and this can be obtained by:

- every vehicle to which the Directive applies is equipped with a DSRC (dedicated short range communications) device;
- each device is associated to a single vehicle;

A22 assumptions for implementing the legislation:

- every vehicle should be equipped with an on-board device which requires a specific legislative framework that makes the use of electronic toll collection mandatory for such vehicles;
- there are no management alternatives other than asking for the vehicle registration documents, reading the license plate (if Italian) and consulting the files of the Department of Motor Vehicles

Analysis phase

The harmonization of ETC systems at European level is going on, although the timing of the various Directives is not yet harmonized.
(The EETS Directive was already mandatory for heavy vehicles in 2012 and for light vehicles in 2014, but, at present, there is no European EETS Service Provider).

For vehicles equipped with electronic toll devices conforming to «ETSI ES 200674-1 V2.4.1 electromagnetic compatibility and Radio spectrum Matters (ERM); Road Transport and Traffic Telematics (RTTT); Part 1: Technical characteristics and test methods for High Data Rate (HDR) data transmission equipment operating in the 5,8 GHz Industrial, Scientific and Medical (ISM) band» (EETS legislation) **it is possible to manage the problem (back office) using the fields describing the ecological characteristics of the vehicles.**

Analysis phase

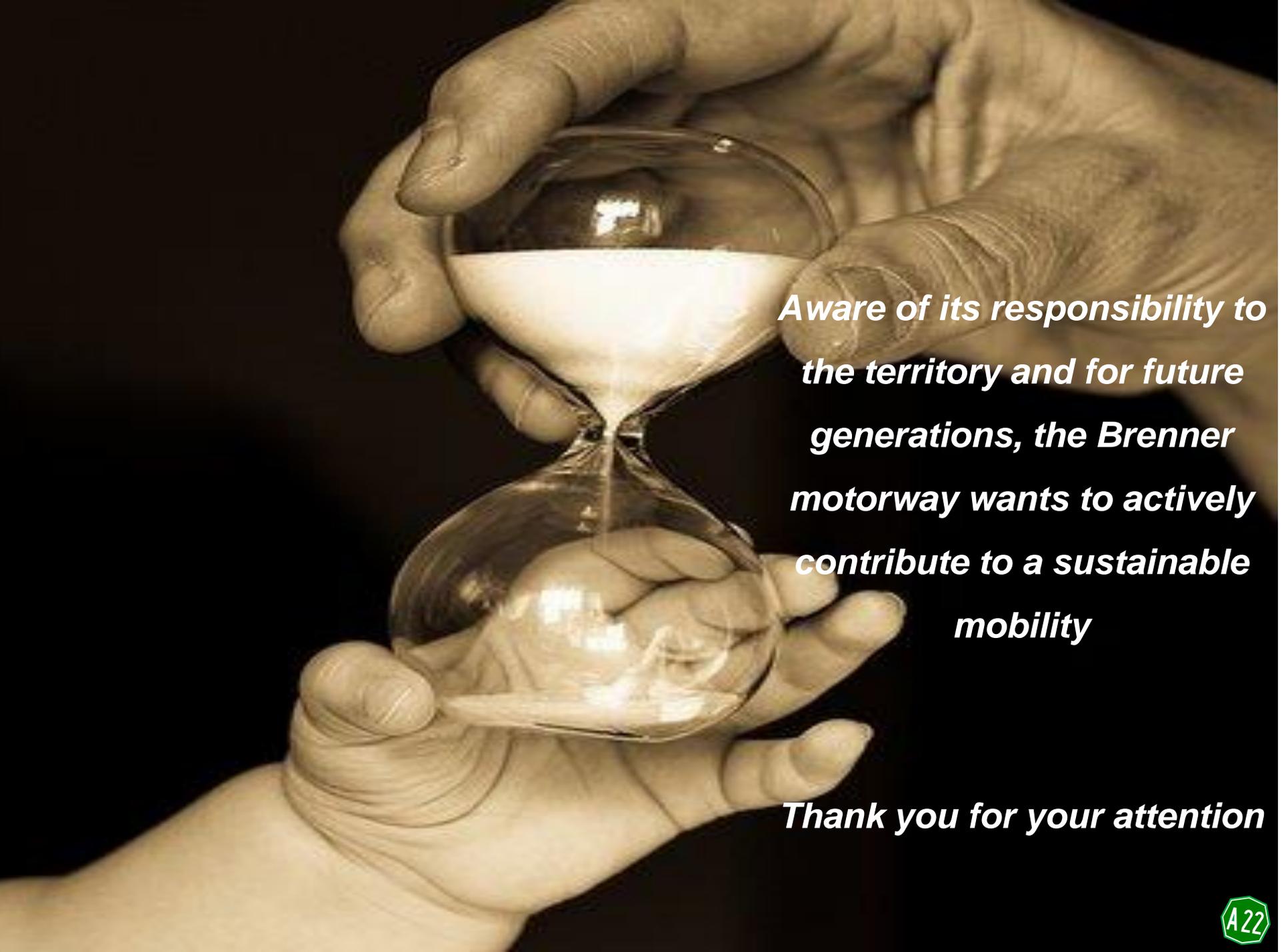
Rapid advancement in information technology



Road pricing scheme including the deployment of a number of ITS technologies

The key functionalities include the collection and provision of information that can be used:

- to enable better decision making by the transport user of the infrastructure operator;
 - the controlling of the movement of the vehicles;
 - the enhancing of the efficiency of the road charging system.
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- The successful integration of road charging systems with ITS applications will provide further benefits in terms of travel time reduction, improved security and service reliability and cost effectiveness.

A pair of hands is shown holding an hourglass. The hands are positioned on either side of the hourglass, with fingers gently gripping the glass. The hourglass is tilted, and a stream of white sand is falling from the top bulb into the bottom bulb. The background is dark, making the hands and the hourglass stand out. The overall tone is warm and thoughtful.

***Aware of its responsibility to
the territory and for future
generations, the Brenner
motorway wants to actively
contribute to a sustainable
mobility***

Thank you for your attention