TURIN SUSTAINABLE SCHOOL CATERING

From the INNOCAT project onwards

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Ghent Sustainable Catering Forum, 9.06.2016
Procurement of Eco-innovation in the Catering Sector (INNOCAT) 1

- The catering sector impact on “sustainability” in the wide sense: environmental – social – economical.

- The power of the public demand to showcase and deliver sustainable and eco-innovative consumption patterns in the sector

- The Innocat focus and main results:
  - City of Torino –> School Catering
  - Johnson Matthey/Univ. of Sheffield -> Vending machines
  - Resah-Idf -> Food containers and recycling services
  - Environment Park – Arpa Piemonte -> Office Catering
Cities Interest Group on Sustainable School Catering/Food:
At the start of 2015, Turin launched a European city interest group on sustainable school catering, involving procurers from the cities of Copenhagen, Helsinki, Ghent and Malmö, aimed at collaborating and sharing experience within their procurement activities.

Main activities:
• Several online and face-to-face meetings between the cities and other relevant experts
• Cities discuss concrete problems/challenges regarding sustainable procurement of food and catering services for schools
• Developed new procurement guidelines for the City of Turin’s upcoming procurement of school catering services in 2017. Cities and other experts provided detailed feedback to Turin during development phase.
• Involved in helping shape the Commission’s new GPP criteria for food and catering services
• More info: http://www.sustainable-catering.eu/participate/city-interest-group/
Innocat Publications

• Sustainable Public Procurement of School Catering Services
  *A State of the Art Report*
  > Copies are available here today

• Best Practice in Market Engagement for public procurement
  *Snapshots from around Europe*
  > Will be published in July online

For more information, contact us: innocat@iclei.org
TURIN FOCUS:
SUSTAINABLE SCHOOL CATERING POLICY
KEY FIGURES: TURIN SCHOOL CATERING SERVICE (1)

Size of the service:

- **45.000** meals a day
- **5.800** alternative menus for ethic/religious reasons
- **1.150** special diets for food intolerances

The catering service is performed by **specialized catering companies**, not directly by the City of Torino. The companies are selected through an open procedure.

The service is **managed, coordinated and controlled by the City of Torino.**
KEY FIGURES: TURIN SCHOOL CATERING SERVICE (2)

• **Three years** contract (possibility to be renovated for further 2 years)

• **22.000 meals** delivered in three year , but it is necessary to consider the snack for kindergarten ~ **7.000.000**

• The urban area is divided in **eight lots**, each lot correspond with one or two district

• Each lot considers the **preparation of fresh meals for kindergarten and carried meal for primary school**
THE CONTEXT: GPP POLICIES

- In 2008 Italy adopted the «Action Plan for the environmental sustainability of public purchasing». Within this Action Plan, a set of Minimum Environmental Requirements (so called CAM) for the catering services have been approved.
- The City of Turin has developed targeted policies for the strategic use of public procurement. (GPP – social clauses – now focus on PPI within Torino Smart City.
- More specifically, there is a policy in the school sector, called “Smart School” which focuses on the link with catering procurement and educational path.
KEY POINT OF THE CURRENT PROCUREMENT (Contract 2013-2016)

Considering that school catering service represents an opportunity to spread *food education* and has significant impacts on the economy of the territory for the agro-food district, on the 17 January 2012 the City Council approved the guidelines for the School Meal Plan of the triennium 2013 -2016.

These guidelines defined two main criteria, closely related to each other, for the redaction of tender specifications:

- Improve food sustainability
- Improve environmental sustainability
FOOD SUSTAINABILITY

Key points were:

• Healthy products
• High quality of raw material
• Preferably short food supply chain, in order to assure the seasonal and fresh of menus
• Control on the production chain: DOP/IGP; BIO/Lotta Integrata; Fair trade)
Key points were:

• Reduction of km per meal --- short chain supply
• Boost cooperation between producers in the organization of transport, delivery and purchasing ---- CO2 reduction
• Vegetable and fruit from *Lotta Integrata* production system
MAIN EXISTING ECO-FRIENDLY CLAUSES

- replacement of the disposable tableware used in compulsory education schools with dishes and cutlery that may be washed and reused, as was already done in preschool; this determines a positive impact on the environment through the elimination of ca 157 tons of plastic/year to be disposed of in landfills;
- provide further incentive to make use of ecological means of transport to distribute food products and meals in the city, so as to improve the quality of the air;
- have the food service companies use smaller sized low impact packaging materials, and ensure that full attention is paid to the separate collection of packaging materials and rejects management, also at the cooking centres;
- specify the use of cleaning and sanitising products with a low impact on the environment.
INNOCAT CAPACITY BUILDING ACTIVITIES

Within Innocat Project, the City of Torino carried out different preparatory activities and namely:

• **Execution Monitoring of the sustainability requirements** already in force, in order to stimulate compliance and innovation.

• **Study of the climatic impact of the current eco-friendly contract for school catering service** in terms of CO₂ (Carbon footprint Indicator);

• **Early market engagement** with interested stakeholders of the whole supply chain.
Modeling the catering service for the INNOCAT project

PHASE 1
Calculation of greenhouse gas emissions of the food production stages

Resource extraction and processing
Provisioning
Storage
Urban distribution
Packaging
Consumption
Waste management
Life cycle thinking
http://eplca.jrc.ec.europa.eu/
**e.g. GPPI - Different production practices for food**

<table>
<thead>
<tr>
<th>Product</th>
<th>Conventional production systems</th>
<th>School year 2013/2014</th>
<th>Emission save</th>
<th>Variation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agro-technique</td>
<td>tCO₂ eq</td>
<td>Agro-technique</td>
<td>tCO₂ eq</td>
</tr>
<tr>
<td>Apples</td>
<td>Conventional</td>
<td>82.45</td>
<td>Organic / integrated</td>
<td>57.89</td>
</tr>
<tr>
<td>Pears</td>
<td>Conventional</td>
<td>12.69</td>
<td>Organic / integrated</td>
<td>9.48</td>
</tr>
<tr>
<td>Peaches</td>
<td>Conventional</td>
<td>12.53</td>
<td>Organic / integrated</td>
<td>8.95</td>
</tr>
<tr>
<td>Potatos</td>
<td>Conventional</td>
<td>70.61</td>
<td>Organic / integrated</td>
<td>43.73</td>
</tr>
<tr>
<td>Carrots</td>
<td>Conventional</td>
<td>25.93</td>
<td>Organic / integrated</td>
<td>18.07</td>
</tr>
</tbody>
</table>
PHASE 2
Calculation of greenhouse gas emissions of the food transportation stages

Urban distribution
Packaging
Consumption
Waste management

Provisioning
Storage
Resource extraction and processing

Life cycle thinking
http://eplca.jrc.ec.europa.eu/
e.g. GPP2 - Local provisioning of food

<table>
<thead>
<tr>
<th>Product</th>
<th>Origin</th>
<th>tCO₂ eq</th>
<th>Origin</th>
<th>tCO₂ eq</th>
<th>Emission save</th>
<th>Variation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apples</td>
<td>Piedmont</td>
<td>3.41</td>
<td>Piedmont</td>
<td>3.41</td>
<td>0.00</td>
<td>0%</td>
</tr>
<tr>
<td>Pears</td>
<td>UE supply-chain</td>
<td>1.32</td>
<td>Piedmont</td>
<td>0.70</td>
<td>-0.62</td>
<td>-47%</td>
</tr>
<tr>
<td>Peaches</td>
<td>UE supply-chain</td>
<td>1.66</td>
<td>Piedmont</td>
<td>0.69</td>
<td>-0.97</td>
<td>-58%</td>
</tr>
<tr>
<td>Potatos</td>
<td>UE supply-chain</td>
<td>7.60</td>
<td>Piedmont</td>
<td>3.32</td>
<td>-4.28</td>
<td>-56%</td>
</tr>
<tr>
<td>Carrots</td>
<td>UE supply-chain</td>
<td>6.92</td>
<td>Italy</td>
<td>5.80</td>
<td>-1.12</td>
<td>-16%</td>
</tr>
</tbody>
</table>

Comparison of total greenhouse gas emissions of the five supply-chains studied in the school year 2013/2014 and a scenario with the situation in school year 2012/2013
PHASE 3
Calculation of greenhouse gas emissions of the food cooking and serving stages, including materials, energy and waste

Urban distribution
Provisioning
Storage
Resource extraction and processing
Packaging
Consumption
Waste management

Life cycle thinking
http://eplca.jrc.ec.europa.eu/
### e.g. GPP3 - Washable Tableware and Tableware in Mater-Bi®

<table>
<thead>
<tr>
<th>Material/Process</th>
<th>Carbon Footprint [tCO₂ eq/anno]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disposable Tableware-Polypropylene Polystyrene</td>
<td>295.81</td>
</tr>
<tr>
<td>Primary packaging Polyethylene</td>
<td>20.20</td>
</tr>
<tr>
<td>Secondary packing (cardboard)</td>
<td>171.27</td>
</tr>
<tr>
<td><strong>DISPOSABLE TABLEWARE</strong></td>
<td><strong>487.28</strong></td>
</tr>
<tr>
<td>Production of melamine dishes</td>
<td>95.45</td>
</tr>
<tr>
<td>Washing of plates and cutlery</td>
<td>42.55</td>
</tr>
<tr>
<td>Washing of glasses</td>
<td>42.55</td>
</tr>
<tr>
<td><strong>WASHABLE TABLEWARE (EXCLUDING TRANSPORT)</strong></td>
<td><strong>180.55</strong></td>
</tr>
<tr>
<td>Transport of tableware</td>
<td>107.32</td>
</tr>
<tr>
<td><strong>WASHABLE TABLEWARE (INCLUDING TRANSPORT)</strong></td>
<td><strong>287.87</strong></td>
</tr>
<tr>
<td>Mater-Bi® life cycle</td>
<td></td>
</tr>
<tr>
<td><strong>COMPOSTABLE TABLEWARE</strong></td>
<td><strong>373.54</strong></td>
</tr>
</tbody>
</table>

- **DISPOSABLE TABLEWARE** compared to **WASHABLE TABLEWARE (EXCLUDING TRANSPORT)**: **306.73 (-63%)**
- **WASHABLE TABLEWARE (INCLUDING TRANSPORT)** compared to **Mater-Bi® life cycle**: **199.41 (-41%)**
- **COMPOSTABLE TABLEWARE** compared to **Mater-Bi® life cycle**: **113.74 (-32%)**
PHASE 4

Testing the carbon footprint reduction occurred by the adoption of the GPP practices included in the INNOCAT project

<table>
<thead>
<tr>
<th>Stage of the catering service</th>
<th>GPP Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food production</td>
<td>Different production practices for food</td>
</tr>
<tr>
<td></td>
<td>Change food component in the diet</td>
</tr>
<tr>
<td>Food transport</td>
<td>Local provisioning of food</td>
</tr>
<tr>
<td></td>
<td>Improvements in local distribution of food</td>
</tr>
<tr>
<td>Cooking, storage and serving</td>
<td>Adoption of energy efficient appliances</td>
</tr>
<tr>
<td></td>
<td>Certified electricity exclusively from renewable sources</td>
</tr>
<tr>
<td></td>
<td>Electricity from photovoltaic panels</td>
</tr>
<tr>
<td>Waste management</td>
<td>Washable tableware</td>
</tr>
<tr>
<td></td>
<td>Tableware in Mater-Bi®</td>
</tr>
<tr>
<td></td>
<td>Tap water</td>
</tr>
<tr>
<td></td>
<td>Optimization (80%) of the recycling of inorganic waste</td>
</tr>
<tr>
<td></td>
<td>Optimization (90%) of the composting of organic waste</td>
</tr>
</tbody>
</table>
THE NEW POLICY GUIDELINES 2016-2020

• define the **procurement strategy** and **main sectoral eco-innovative requirements** for the future school catering service contract, as a result of demand analysis, study activities and early market engagement carried out within the INNOCAT project.

• Structure:
  1. The reference context: the Innocat Project and PPI
  2. Collective catering service and environmental impact
  3. Towards a model of school catering with low environmental impact: the study path within the INNOCAT project
  4. Salient aspect of the Future School Catering Policy
     4.1 The strategy of the tender
     4.2 Domain of interventions
     4.3 Further actions for the preparation of the tender
  5. Conclusions and next steps
Object of the future Procurement (1)

-> propose a new model for a school catering service having a low impact on the environment and encompassing all aspects of the service life cycle in an integrated manner.
<table>
<thead>
<tr>
<th>Objective</th>
<th>Possible eco-innovative solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offer a well balanced menu, with local and seasonal products (thereby reducing mileage per meal and impact on the environment)</td>
<td>Source foods from organic farming and/or integrated pet management. Buy local products in season</td>
</tr>
<tr>
<td>Promote new and more equitable forms of dialogue with farmers, with the aim to reduce costs and improve the local economy</td>
<td>Buy “short supply chain” products, by seeking the involvement of primary producers and reducing the number of intermediaries</td>
</tr>
<tr>
<td>Reduce wastes generation and improve its management, especially in terms of packaging materials and modalities</td>
<td>Buy foods in multi-serve packs; Use reusable tableware; use biodegradable and compostable food containers. Improvements to separate waste collection</td>
</tr>
<tr>
<td>Reduce food waste by promoting the use of uneaten food to meet social needs</td>
<td>Promote educational activities to foster a healthy eating culture and help reduce food waste. Edible leftovers reuse projects (in case of huge amount)</td>
</tr>
<tr>
<td>Reduce the amount of energy used by kitchen equipment and the whole consumption of the cooking centre</td>
<td>Efficiency criteria for kitchen equipment</td>
</tr>
<tr>
<td>Reduce the environmental impact of food and meals transportation with positive effects also on health</td>
<td>Improved logistics and reduced emissions from meal transport vehicles.</td>
</tr>
<tr>
<td>Reduce environmental impact and minimize negative effects on health related to cleansing products</td>
<td>Minimised use of hazardous chemical cleaning products (use Ecolabel products)</td>
</tr>
</tbody>
</table>
THE PROCUREMENT STRATEGY (1)

• Guiding Principles

INNOVATION — OPENNESS — INTEGRATION

ENVIRONMENTAL SUSTAINABILITY

FOOD QUALITY AND CULTURAL ENHANCEMENT OF LOCAL FOODS
THE PROCUREMENT STRATEGY (2)

• Open procedure
• Layout of Technical specifications – Basic vs Noteworthy
• Use of MEAT criteria + Evaluation set
• Possible subdivision in territorial lots
• Duration: 3+2 years service contract
• Execution control – Training to personnel and to users as continuing innovation oriented contractual items
MAIN INTERVENTION AREAS

1. FOOD PRODUCT CHARACTERISATION
2. ENERGY CONSUMPTION (with special regard to electrical appliances)
3. FOOD PRODUCT AND MEAL LOGISTICS AND TRANSPORT
4. DISHWARE
5. PACKAGING AND WASTE
6. CLEANING PRODUCTS
7. OTHER INDIRECT ASPECTS
In accordance with the guiding principles, the future tender will promote food products that meet clearly specified production rules, and defined as follows:

**Environmental friendly Production Methodology:**
- Products from organic farming
- Integrated Production

**Seasonality & Short supply chain products** (from Region Piedmont or other adjacent eu areas, guaranteeing a reduction in Km per meal)

“Typical” products: i.e., products certified as PDO (Protected Designation of Origin) and PGI (Protected Geographical Indication), as defined in EC Reg. 510/2006, and as TSG (Traditional Speciality Guaranteed), as defined in EC Reg.
FOOD (2)

- Fruit & Vegetables. Already mostly from Organic/integrated and short supply chain (Italy or Piedmont)

- principles of short supply chain and seasonality reinforced: Piedmont region or other adjacent regions (pig meat; pasteurized eggs; fish)

- all Organic or Integrated Production (including a % of organic aquaculture fish)

- new addiction: canned or syrup fruit (substituting sweets)

- traditional products (e.g. Ham; dairy products; PAT products such as Rubatà; Honey; Torcetti, Canestrelily, Giandujotto, etc.)

- reduced meat in the menu (veggy meal implemented for all + alternative veggy meal available on request)

- educational projects

Further Optimization:

50% reduction of meat-based meals
## ELECTRICAL APPLIANCES

<table>
<thead>
<tr>
<th>2. 1 Electrical Appliances in schools</th>
<th>2.1.1</th>
<th>Request of professional electrical appliances classified with energy class corresponding to the A class (or higher) and/or use of appliances whose energy efficiency has been tested – with appropriate means – and certified by expert organisations.</th>
<th>Noteworthy</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1.2</td>
<td>Proposal of energy saving projects inspired by energy and/or water saving criteria, such as for instance, gasket replacement, burner maintenance, etc.</td>
<td>Noteworthy</td>
<td></td>
</tr>
<tr>
<td>2.1.3</td>
<td>Provision of Specific training for the users, resulting in greater awareness and a more efficient use of the appliances.</td>
<td>Noteworthy</td>
<td></td>
</tr>
<tr>
<td>2.2 Electrical appliances in cooking centres</td>
<td>2.2.1</td>
<td>Request to propose a project designed to enhance the efficiency of the cooking centres and reduce their impact on the environment</td>
<td>Noteworthy</td>
</tr>
</tbody>
</table>

Further optimization:

- Electricity from solar panels
### TRANSPORT & LOGISTICS

#### 3. LOGISTICS AND TRANSPORTATION OF FOOD PRODUCTS / MEALS

<table>
<thead>
<tr>
<th>Logistics</th>
<th>3.1</th>
<th>Adoption of mobility management systems</th>
<th>Noteworthy</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2</td>
<td>Provision of driving style (“ecodriving”) training for the drivers</td>
<td>Basic</td>
<td></td>
</tr>
<tr>
<td>3.3</td>
<td>Proposal of projects aiming to optimise the logistics aspects by taking action on the different parameters involved</td>
<td>Noteworthy</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transport Fleet</th>
<th>3.4.1</th>
<th>Use of vehicle with the Euro V category or higher</th>
<th>Basic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport Fleet</td>
<td>3.4.2</td>
<td>Use of “green” vehicles, i.e., vehicles running on natural gas or LPG, or, in particular, electric vehicles.</td>
<td>Noteworthy</td>
</tr>
</tbody>
</table>

**Further Optimization:**

*creation of distric cooking centres*
Ongoing actions to reduce food waste:
- Portions adequate to the different targets;
- Introduction of meals identified by the users through educational projects like “Il menu l’ho fatto io”
- Training to professionals (e.g. portioning; recycling)
- Online booking of meals (day by day)
## DISHWARE

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>Use of reusable dishware in compulsory education schools.</td>
<td>Basic</td>
</tr>
<tr>
<td>4.2</td>
<td>Provisions for low environmental impact collection and sanitization of re-usable dishware.</td>
<td>Basic</td>
</tr>
<tr>
<td>4.3</td>
<td>Alternative Use of disposable dishes, cups and cutlery from an EC supply chain, in lieu of reusable dishware, provided that they are made of biodegradable and compostable materials</td>
<td>Basic</td>
</tr>
<tr>
<td>4.4</td>
<td>Use of single-serve containers made from biodegradable and compostable materials for Special diet meals.</td>
<td>Basic</td>
</tr>
</tbody>
</table>

Further Optimization: **Increase of 50% of recycling**
## 5. PACKAGING AND WASTE

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5.1</strong></td>
<td>In pre-duty schools, use of multi-serve packs for a set of food products such as: fruit juices, snacks, toasted bread, biscuits, and the like.</td>
<td>Basic</td>
</tr>
<tr>
<td><strong>5.2</strong></td>
<td>Other Innovative solutions to reduce packaging</td>
<td>Noteworthy</td>
</tr>
<tr>
<td><strong>5.3</strong></td>
<td>Training on proper waste disposal for the operators</td>
<td>Basic</td>
</tr>
<tr>
<td><strong>5.4</strong></td>
<td>Proposal of educational projects for compulsory education school and preschool users</td>
<td>Noteworthy</td>
</tr>
<tr>
<td><strong>5.5</strong></td>
<td>Extension of the already existing requirement on the use of biodegradable and compostable bags to other items (such as foods to be kept at ambient temperature), even in bigger quantities</td>
<td>Basic</td>
</tr>
</tbody>
</table>

Further Optimization: **- Increase of 50% of recycling**
### CHEMICAL CLEANSING PRODUCTS

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1</td>
<td>Use of detergents and other cleaning products that bear an Ecolabel or have similar characteristics in terms of being free of harmful substances</td>
<td>Basic</td>
</tr>
<tr>
<td>6.2</td>
<td>Use of detergents and other cleaning products in the kitchens are kept in rechargeable containers</td>
<td>Basic</td>
</tr>
<tr>
<td>6.3</td>
<td>Provision for specific training for the operators on the use of cleaning products in order to prevent excessive quantities from being used and at the same time ensure effective cleaning and disinfection.</td>
<td>Basic</td>
</tr>
<tr>
<td>6.4</td>
<td>All types of tissue paper (paper handkerchiefs, napkins, toilet paper, kitchen rolls) have to bear an Ecolabel or equivalent</td>
<td>Basic</td>
</tr>
<tr>
<td>6.5</td>
<td>Bags for organic refuse must have eco-friendly characteristics (e.g., made of biodegradable and compostable plastic, or made of paper).</td>
<td>Basic</td>
</tr>
</tbody>
</table>
NEW SUSTAINABLE CATERING POLICY GUIDELINES: NEXT STEPS

• These guidelines represent **an official policy document** for the city of Torino:

  - **technical approval**: December 2015
  - **Political approval**: March 2016
  - **Official Launch**: within INNOCAT NATIONAL EVENT on the 18° March 2916

  - First renegotiation of the current contract covering further 1 year: already implemented the food side (organic pasta + traditional products introduced)

  -- Next procurement will be launched by 2017 and will be fully inspired by the new policy
HOW TO GO FURTHER

• Educational – accompanying path towards other / more critical target groups (e.g. teenagers)
  -> plan to experiment a new educational projects called “IL MENU SECONDO NOI” aimed at responding to the needs of food quality, socialization and autonomy a participatory process in the choice of the menu, the concept of the canteens and the socialization aspects.
  -> plan to work on a coordinated image of municipal canteen around the sustainability leit motiv
  -> promote the coordinated action among infrastructural/immaterial activities in schools boosting the educational aspects of the management of public assets and services
Cross fertilization between the INNOCAT & PROLITE PROJECT
Visual Identity

LOGO

MASCOTTE

SET DI ICONE

crescere insieme con qualità

SITO INTERNET E PAGINA FACEBOOK
FASE 4 – STORYTELLING

1. Ai amici di Torino

- Spiegare in modo semplice la prima parte della filiera: il viaggio dei prodotti dalla terra ai contours di scuola
- Trasmettere le qualità nutritive dei prodotti.

Un'insalata di salute

- Carciofo
- Melanzana
- Cipolla

Inizia l'oceano!

- Cipolla
- Pomodoro

- Orzo
- Parmigiano
- Erbe aromatizzate
Sustainability Graphics
What has been achieved?

Fully integrated concepts for improved energy efficiency of lighting appliances and overall comfort at the benefit of final users.

Starting from a strong lighting project, all user comfort variables are faced.

Relevant reduction of the lighting energy demand:
At least by -40%.

High quality, reliable, easy of use technological solutions:
Beyond National Laws/International Norms.

New intervention model for lighting extraordinary maintenance works:
with impact on the overall building user experience.
From PROLITE: the new canteen finishing model
...within a renewed concept of school spaces and lighting
Conclusions:

SUSTAINABLE PUBLIC PROCUREMENT AS A STRONG POLICY INSTRUMENT WITHIN TURIN OPEN INNOVATION STRATEGY FOR TORINO SMART CITY

OPENinTO POLICY PILLARS:

• SMILE PLANNING
• TORINO SOCIAL INNOVATION ECOSYSTEM & SERVICES
• TORINO LIVING LAB
• SMART PROCUREMENT
• CIVIC ENGAGEMENT
• INNOVATION FROM THE INSIDE – INNOVA.TO
• OPEN INNOVATION CENTER
Conclusions:

- THANKS FOR THE ATTENTION

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