Milan Integrated Water Service and Investment Strategy

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Document objectives

- **Presenting MM S.p.A.**, its history and the current scope of business

- **Describing** the main features of the **Integrated Water Service** of the **City of Milan**

- Describing the **regulatory IWS framework** in which MM operates

- Analyzing **planning procedures** and **investment planning policy** directives

- Highlighting recent **MM investment and financial strategy** with reference to IWS
Agenda

- Company Profile
- Business Description
- IWS Regulatory Framework
- Investment Strategy
Scope of business and evolution

- Founded in 1955, MM has designed and supervised the construction of all Milan Metro lines. MM is fully owned by the Municipality of Milan.
- MM then extended its activity in the infrastructure engineering carried out mostly on behalf of the Municipality.
- In 2003 the Milan City Council assigned to MM the Integrated Water Service (IWS), to improve the quality of services.
- MM is managing the IWS on an in-house providing scheme with a 2037 horizon.

**MM has steadily enlarged its scope of business in public services area, becoming a solid multiservice reality.**
MM is an in-house company fully owned by the Municipality of Milan
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Main business features

INTEGRATED WATER SERVICE
- **Invoiced volumes** City of Milan (2016): ~186 millions of cubic meters
- **Served population**: 1.4 mln residents (Milan) for a total of 2.0 mln of users
- Almost 3,800 km of network managed, 587 wells, 2 wastewater purification plants
- Licensed until 2037, in line with ATO Plan length

ENGINEERING
- Activity mainly based on a Service contract with Milan Municipality
- The Division acts on a multi-service basis for MM businesses
- 2 subsidiaries, active on national basis: ME e NME (Naples metro)

PUBLIC HOUSING
- About 39,000 units managed, of which about 29,000 accommodations
- In-house activities on the basis of a thirty-year agreement, ending in 2045

IWS is the main business of the company and it can count on a strong engineering internal expertise

Source: MM data
The IWS of the City of Milan

**AQUEDUCT**
- Milan network: **2,230 km**
- Distributed water: **224 mln** cubic meters
- Technical leakages index (AEEGSI method): **11.5%**

**SEWAGE**
- Milan network: **1,560 km**
- **Mixed sewage network** for white and black wastewater
- Volumes conveyed to purification plants: **~238 mln mc**

**PURIFICATION**
- **San Rocco Plant**, directly managed by MM
  - Volumes: **94 mln mc**
- **Nosedo Plant** (Milano Depur):
  - Volumes: **144 mln mc**
- **Peschiera B. Line** (Amiacque)
  - Volumes: **25 mln mc**

**CUSTOMER MANAGEMENT**
- Resident population served: **1.4 mln** inhabitants;
- Total population served (including commuters, tourists,...): **2.0 mln** inhabitants
- Total customers: **~ 50,000**
- Billed water: **~186 mln** cubic meters

**ANALYSES AND CONTROLS**
- **17,809** analyzed samples
- **250,799** parameters analyzed

2016 data

100% service coverage level
Milan IWS context features

Geography & Demographics
- Very concentrated territorial area: 181.8 sq. km
- High population density: 7,500 inhabitants per sq.km
- High anthropization levels and pressure, which increase intervention complexity and quality needs

Infrastructural Completeness
- High endowment of IWS networks (about 3,800 km) in a small territory, with low level of technical leakages
- 100% of the territory served by wastewater purification plants
- The purified water can be entirely used for agricultural purposes

Long term efficiency and effectiveness
- IWS Licensed until 2037, in line with ATO Plan length
- Very low tariff on a national and international level
- Milan as a flagship city for Italy ( Expo 2015)

MM manages a complex and very relevant IWS system
**Milan IWS context features**

**IWS yearly average cost for Italian households**

(€/year for a 150 cubic meters consumption; 2015)

### Florence 378

### Genoa 332

### Bologna 255

### Turin 246

### Palermo 227

### Rome 212

### Naples 189

### Milan 103

### Avg. Italy 260

**Vs. MM** 3,7x 3,2x 2,5x 2,4x 2,2x 2,1x 1,8x 1,0x 2,5x

**MM tariffs for households are ~60% lower than national average tariffs**

*Sources: Italy – Federconsumatori, 2015 based on household tariff only on a specific consumption level*
Agenda

❖ Company Profile
❖ Business Description
❖ **IWS Regulatory Framework**
❖ Investment Strategy
Italian IWS organizational structure

Active players and flows in tariff definition

<table>
<thead>
<tr>
<th>AEEGSI</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Setting and reviewing the regulatory framework</td>
</tr>
<tr>
<td>• Definition of the ATOs and the guidelines</td>
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<tr>
<td>• Approving the investments plans, programs and financial plans submitted by the EGATOs (and agreed with the industrial operators), and hence the resulting tariffs;</td>
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<tr>
<td>• Verifying of quality performance data of the IWS</td>
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<table>
<thead>
<tr>
<th>Enti Governo d’Ambito (EGATO)</th>
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<tbody>
<tr>
<td>• Establish and ensure the correct application of the IWS tariffs obtained by using calculation methods based on specific algorithms and tools, to be submitted periodically for the approval of the National Authority (AEEGSI)</td>
</tr>
<tr>
<td>• Definition of the investment plan of the relevant territory following the proposal of the industrial operator; definition of specific quality data;</td>
</tr>
<tr>
<td>• Definition of the economical and financial plan of the relevant ATO</td>
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<tr>
<th>Industrial players</th>
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<tbody>
<tr>
<td>• IWS Management under individual concession agreements (assigned through: public tender; mixed public/private shareholding; in-house providing scheme)</td>
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<tr>
<td>• Defines proposals for investment plans and financial plans to be submitted to the EGATO; tariff application</td>
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<tr>
<td>• Monitor the performance of water service and supply, of water quality and of customer satisfaction, sending relevant data to EGATO/AEEGSI.</td>
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<thead>
<tr>
<th>Italian Regions</th>
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<tbody>
<tr>
<td>• Identification of the Enti di Governo d’Ambito (EGATO)</td>
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<tr>
<td>• Often when an ATO corresponds to one Region the relevant EGATO is the same Region</td>
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<tr>
<th>ATOs</th>
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<tr>
<td>• An Ambito Territoriale Ottimale (ATO) is the reference territory in which the IWS is managed</td>
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<tr>
<td>• Each ATO ranges from some Municipalities to one Region</td>
</tr>
<tr>
<td>• The ATO can be divided into territorial basins for the IWS settlement</td>
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</table>
**Reduction of institutional and market fragmentation**

- Italian regulatory scheme for Water industry is thus based both on a national and a local institutional framework.

- AEEGSI is pursuing an objective of general reduction in the number of players, in order to stimulate efficiency through dimensional growth and scale economies.

- The number of local authorities (EGATO) has declined from 93 in 2011 to 70 in 2015 and has further decreased to 64 in 2016.

- The number of territorial basins, which should be the official perimeter of a single entrustment, has decreased from 94 in 2015 to 92 in 2016; the integration of current players is thus still on going.

- In terms of the total number of players operating in the industry, AEEGSI has approved 2,103 tariffs to single players for 2012-2013 period and 1,971 on 2014-2015;

- There are at the moment a few, key players in the industry; MM is one of them.

**Water tariff composition according to MTI 1 rules ('14-'15)**

- Exogenous Opex 27%
- Capex 21%
- FoNi 4%
- Balancing components 3%
- Endogenous Opex 45%

- The tariff structure for Italian IWS players show a high component of current operating expenses (which amount for about 72% of total revenues);

- Investment components (Capex and FoNi) are growing and will increase in 2016-2019, but their total aggregate is still about 1/4 of total revenues;

- This revenue structure is the result of the historical cost structure of the Italian players.
## IWS key regulatory takeaways

<table>
<thead>
<tr>
<th>Stable and predictable</th>
<th>Cost and Investment recovery</th>
<th>Low risk profile</th>
<th>Supportive framework for investments</th>
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</thead>
</table>
| • AEEGSI: independent regulatory authority  
• Transparent and predictable regulatory framework  
• 3rd regulatory period will consistently run for the 2016-2019 years | • Tariff formula allows for timely recovery of Opex including depreciation and a fair return on investments  
• Timely recognition of capex invested (2 years lag); depreciation allowance fairly reflects assets consumption | • No volume risk  
• Exposure to clients mitigated by recognition of bad debt % on revenues  
• Long term expiry with compensation mechanism mitigating capital structure aspects of concession termination risk, defined on a national regulation basis | • FoNI allowance to finance new investments in advance  
• Possibility to increase tariffs with a higher cap should important investment be planned |
Agenda

- Company Profile
- Business Description
- IWS Regulatory Framework
- Investment Strategy
The IWS planning process is composed by a multi-level systems of planning documents, with periodic updates and monitoring.
## The IWS planning process (2/2)

### Roles in the planning process

<table>
<thead>
<tr>
<th>Document</th>
<th>Purpose</th>
<th>MM</th>
<th>EGATO</th>
<th>AEEGSI</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATO Plan</td>
<td>• Definition of service levels, objectives, quality levels</td>
<td>• Data transmission and intervention proposal</td>
<td>• Plan definition and approval</td>
<td>• Plan verification</td>
</tr>
<tr>
<td></td>
<td>• General planning of investments</td>
<td>• Execution</td>
<td>• Plan implementation monitoring</td>
<td></td>
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<tr>
<td>Intervention Program (PEF-PdI)</td>
<td>• 4-year planning of interventions defined at the beginning of each regulatory period; includes economic and financial projections (PEF) and tariff proposal</td>
<td>• Data transmission and intervention proposal</td>
<td>• Definition of program and tariff proposal to AEEGSI</td>
<td>• Verification and tariff approval</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Execution and tariff application</td>
<td>• Service objectives</td>
<td></td>
</tr>
<tr>
<td>Operating Annual Plan (POA)</td>
<td>• Declines intervention program and updates PdI planning for each year of the regulatory period</td>
<td>• Proposal</td>
<td>• Approval</td>
<td></td>
</tr>
</tbody>
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### Plans and Programs must ensure the financial and economic sustainability of the Integrated Water Service for the entire period
Investment strategy: the pillars

**ECONOMIC AND FINANCIAL OPTIMIZATION**
- Keeping low tariffs
- Total financial needs coverage
- Sources diversification and risk minimization
- Matching investment life and debt maturity

**INFRASTRUCTURAL OPTIMIZATION**
- Focus on renewal rather than on extension
- Introduction of innovative technologies
- Conserving network efficiency levels

**SOURCES**

**USES**

**HIGHLIGHTS ON INVESTMENTS:**
- Total ATO Plan investments (2014-2037): 890 mln €
- Average investment per year: ~39 mln €
- Total planned investments 2016-2020: 246 mln €

Of which:
- **Aqueduct**: ~50%
- **Sewage & Purification**: ~45%
- **Other**: ~5%
Investment strategy: the planning process

**Identification of existing service criticalities**
- Water supply
- Water treatment and distribution
- Sewage service
- Wastewater purification service
- Metering service

**Definition of Service objectives**
- Specific service objectives for each of the IWS activities: Aqueduct, Sewage, Purification
- Identification of "other intervention" with general or cross-activity purpose

**Individuation of Intervention lines**
- General intervention principles for the definition of the specific investments for each IWS activity

**Definition of planned investments for each activity**

About 200 areas of intervention currently planned in 2016-2020 period
Service objectives for MM strategy

SERVICE OBJECTIVES INCLUDED IN THE INVESTMENT STRATEGY

**AQUEDUCT**
- **A1** Optimizing quality and quantity of water potable resources
- **A2** Perfectioning of quantitative distribution level (e.g.: plant optimization)
- **A3** Perfectioning of qualitative distribution level
- **A4** Enhancement of network efficiency level
- **A5** Safety and video surveillance

**SEWAGE**
- **S1** Service enhancement and overloads reduction
- **S2** Network efficiency level conservation
- **S3** Network hydraulic efficiency optimisation (e.g.: parasitic water diversion,...)

**PURIFICATION**
- Maintaining and increasing plant potentiality & performance, through:
  - **P1** Ensuring treatment continuity, efficiency and completeness
  - **P2** Implementing interventions for plant and devices revamping
  - **P3** Using plant management innovative solutions focused on energy saving

GENERAL INTERVENTION PRINCIPLES

*Innovation and smart water projects; energy saving and environmental sustainability; low urban impact interventions; IT enhancement*
Investment strategy: a different view

IWS Investments are not just a matter of volumes, but a matter of quality.
1. **EFFICIENCY IN WATER USE**

- **Condition assessment** audits for distribution networks
- **Aqueduct plant** management *optimization* (DSS)
- **Automatic Meter Reading** installation
- **Low urban impact technologies** (no-dig, CIPP and relining)
- Enhancement of supervision and **remote control systems** and **remote control valves**
- **Aqueduct modelling** calibration
- **Bio denitrification** and denitrification *treatment* systems
- **Continuous monitoring** of distributed *water quality*
- **Video surveillance** and anti-intrusion systems

**Impact areas**

- **AQUEDUCT**
- **SEWAGE**
- **PURIFICATION**

*Expected impact level*

- ![Low](Low.png)
- ![High](High.png)
Innovative investment projects (2/2)

2. ENVIRONMENTAL PROTECTION

- New measurement devices on overflow channels and on receiving watercourses
- Safeguard of receiving watercourses interventions
- Condition assessment audit for sewage networks
- Interventions for parasitic water diversion
- Evolution of UV disinfection and tertiary filtration system

3. ENERGY SAVING

- Substitution and motorization of existing network valves
- Aqueduct plant management optimization (DSS)
- Studies and experimental interventions for aqueduct network pressure and flow rate districts realization
- Installation of cogeneration plants
- Sludge management strategy definition (e.g. recovery processes)

Impact areas

- AQUEDUCT
- SEWAGE
- PURIFICATION

Expected impact level

- Low
- High
How to reach investment effectiveness

**INVESTMENT STRATEGY**

**KEY SUCCESS FACTORS**

- Process Reengineering:
  - Proactive change management (strategic visioning)
  - Aligning activities to technology and regulatory evolution

- IT Strategy:
  - ICT as a key enabler for each field of the IWS management

- Business Intelligence:
  - BI and data management to support strategic decision and performance improvement

- Research and Development:
  - Stimulating cross fertilization and best practice exchange
  - MM: Engineering Experience

- Multiservice Activities:
  - Partnership with universities, suppliers and industrial players to implement innovative solutions

- HR Development:
  - HR training
  - Know how dissemination
  - Competence development

*IWS Investment strategy needs a comprehensive approach*
Financial strategy: market opportunities

Positive regulation impact on investors
- **Stability & predictability**: positive track record from AEEGSI regulation; multi-annual regulation schemes
- **Cost recovery & investment boost**: investment-oriented regulation schemes; full-cost recovery principle in tariffs
- **Lowering risk profile**: volume risks mitigation; termination value discipline on an homogeneous national basis

Favorable market conditions
- **Convenience of financial markets**, with a unique opportunity window due to very low reference rates
- **Multiplicity of available instruments**, such as bank financing, structured loans, corporate & project bonds
- **Growth of investors volume**: increase of institutional opportunities (EIB, CDP) and of foreign private investors
The set-up of IWS financial strategy

1. Total financial needs coverage
   - Definition of a financial strategy to cover the entire financial needs up to 2037
   - Coherence with NFP evolution and with existing debt (no restructuring)

2. Sources diversification
   - Use of financial instruments other than standard bank financing
   - Preference for the choice of multiple instruments, on a convenience analysis basis

3. Risk and collaterals minimization
   - Implementation of a credit Rating process (Investment Grade)
   - Minimizing risks for the Municipality of Milan and avoiding refinancing risk

4. Increase of debt maturity
   - Coherence between financial sources and investment uses
   - Preference for medium to long term instruments

The aim was aligning financial structure to investment and concession features
IWS financial strategy timeline chart

FINANCIAL STRATEGY IMPLEMENTATION PROCESS

Jan 15  Sep 15  Apr 16  Jul 16  Nov 16  Dec 16  2017

Market sounding for banks
Advisor selection and Bridge financing
Moody's & S&P rating announcement
MM SpA Shareholders' Meeting approval
EIB Financing Agreement
Bond Issuance

On going financial strategy management

MM FINANCIAL INSTRUMENTS MAIN FEATURES

**LISTED BOND**

- **Eur 100 mln Notes**, reserved to institutional investors, listed on the Irish Stock Exchange
- **19 years Notes** (2016-35), amortizing since 2025, with **3.15% fixed interest rate**

**EIB FINANCING**

- **Eur 70 mln financing contract**, at a very competitive rate, thanks to "Juncker Plan" (EFSI) of European Commission
- **18 years length** (2016-2034), focusing on 2016-2020 investment plan

**CONTINUING OBLIGATIONS**

- These instruments require the **maintenance of a rating** and a **continuing listing of the Notes** until their final reimbursement
- **MM must maintain some financial and economic performance levels** for all the financing period (so-called covenants)
Thank you