SECTORAL ROUNDTABLE

Federal Infrastructure & Public Works
AGENDA

15 min.  Introduction: Global and Regional Context
Presented by Diego Garcia, Principal, Bain & Company

35 min.  The Government’s Agenda
Presented by Rogelio Frigerio, Minister of Interior, Public Works and Housing
Presented by Pablo Bereciartua, Undersecretary of Water Resources

10 min.  Q&A

15 min.  Investment Opportunities
Presented by Pablo Bereciartua, Undersecretary of Water Resources

15 min.  Q&A
INTRODUCTION

Presented by Diego Garcia,
Principal, Bain & Company
### Great Potential in Water Infrastructure

<table>
<thead>
<tr>
<th>Water Resources</th>
<th>Transportation</th>
<th>Health &amp; Education</th>
<th>Housing</th>
</tr>
</thead>
</table>
| • 100% drinking water  
• 75% sewage  
• 1 Mha irrigated  
• Multipurpose  
• Climate hazards | • Several large investment projects within scope  
• 2,800 km new highways | • State-built hospitals and schools | • 1M housing solutions through subsidized credit and state-built housing  
• 120K new houses |

**Expected Investment**

- **$42.5B**
- **$33B**
- **$4B**
- **$7B**

*Note: Investment corresponds to: 7 yrs in Water, 4 yrs in Transportation, 4 yrs in Health & Education and 4 yrs in Housing. Source: Plan de Agua Argentina (2015); telam.com.ar; Interior Ministry; casarosada.gob.ar*
## GREAT POTENTIAL IN WATER INFRASTRUCTURE

### WATER RESOURCES

- 100% drinking water
- 75% sewage
- 1 Mha irrigated
- Multipurpose
- Climate hazards

### TRANSPORTATION

- Several large investment projects within scope
- 2,800 km new highways

### HEALTH & EDUCATION

- State-built hospitals and schools
- 3,000 kindergardens

### HOUSING

- 1M housing solutions through subsidized credit and state-built housing
- 120K new houses

### Expected Investment

- **WATER RESOURCES**: $42.5B
- **TRANSPORTATION**: $33B
- **HEALTH & EDUCATION**: $4B
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KEY TRENDS IN WATER & SANITATION

1. Increase access to drinking water and sewage infrastructure

2. Higher penetration of water treatment due to increasing environmental concerns

3. Increase private participation to drive growth and efficiency

4. Constant search for system efficiency and reduction of water consumption

Source: Bain Analysis
POTENTIAL TO GROW WATER & SEWAGE

**Drinking water**
% of urban population with access to safe water inside house

<table>
<thead>
<tr>
<th>Country</th>
<th>CHL</th>
<th>URY</th>
<th>BRA</th>
<th>ARG</th>
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</thead>
<tbody>
<tr>
<td>%</td>
<td>100</td>
<td>97</td>
<td>93</td>
<td>87</td>
</tr>
</tbody>
</table>

**Sewage system**
% of urban population with access to sewage network

<table>
<thead>
<tr>
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</tr>
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<tbody>
<tr>
<td>%</td>
<td>97</td>
<td>61</td>
<td>58</td>
<td>57</td>
</tr>
</tbody>
</table>

Potential in Wastewater Treatment

**Waste water treatment penetration**

% of wastewater treated / water consumption

- **Chile**
  - Water emission regulation that identified the need for incremental WWT capacity
  - Right model to encourage private sector to invest
  - Finance availability for the private sector

- **Brazil**
  - Law that generated the need for new capabilities at Municipal level
  - Significant public (PAC, BNDES, CEF) and private financing for sanitation projects
  - Federal and state legislation to incentivize PPP in order to increase efficiency and reduce financial costs

3 POTENTIAL IN PRIVATE PARTICIPATION

**Water & sewage public-private mix (% of pop. served)**

**OPERATION MODELS**
- Traditional concession
- Lease
- Sponsored concession (PPP)
- BOT / BOO
- Operation & Maintenance Contracts

Note: Private Participation: % population served with private sector participation water and/or sewerage provision (2015 estimate)
Source: Pinsent Masons Water Yearbook 2012-2013; Bain analysis
POTENTIAL TO IMPROVE EFFICIENCY

FRESHWATER IS A FINITE RESOURCE

Renewable internal freshwater per capita

ARGENTINA CONSUMES ~1.7X GLOBAL AVERAGE

Residential water consumption by country

- Improve efficiency of the network:
  - Measure and monitor to identify and reduce leakages
  - Adopt efficient equipment
  - Recycle and reuse treated water

- Generate incentives and awareness in consumers:
  - Adopt pricing strategy to drive efficient consumption
  - Promote efficient appliances
  - Educate consumers

US$ ~18B INVESTMENTS IN IRRIGATION

THERE IS POTENTIAL TO INCREASE 3X THE IRRIGATED AREA

INVESTMENT REQUIRED MAINLY IN NEA AND CENTER

Reaching its potential will require investments of ~US$ 18 B

Source: FAO; BID; PROSAC Note: (*) Africa accounts for Sub-Saharan Africa
KEY OPPORTUNITIES FOR PRIVATE SECTOR

WATER AND SANITATION
- Leverage infrastructure by participating as operators through varying models

WASTEWATER TREATMENT
- Invest in wastewater treatment infrastructure through PPPs

WATER EFFICIENCY
- Provide solutions and technology to improve water network efficiency

WATER FOR IRRIGATION
- Invest in irrigation infrastructure through PPPs

Provide supplies & EPC services for infrastructure projects
THE GOVERNMENT’S AGENDA

Presented by Rogelio Frigerio, Minister of Interior, Public Works and Housing
MINISTRY’S KEY INVESTMENT AREAS

Housing & Urbanization

What we do: guarantee housing access and develop urbanization in low income districts

Investment plans: goal of constructing 1M housing solutions, including 120,000 houses

Public Works

What we do: school, universities, hospital and municipal construction

Investment plans: US$ 1B annual investments to develop 1,000 projects

Water Resources

What we do: water resource infrastructure, strategic planning and coordination

Investment plans: US$ 42.5B potential investments (public + private)

Homeland, Public Work and Housing Ministry

Inland

Political & Institutional matters

Municipal relationships

Provinces relationships

Housing & Urbanization

Public Works

Water Resources

Other Public Work
THE GOVERNMENT’S AGENDA

Presented by Pablo Bereciartua, Undersecretary of Water Resources
MINISTRY’S KEY INVESTMENT AREAS

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- Inland
- Political & Institutional matters
- Municipal relationships
- Provinces relationships
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**Water Resources**
- What we do: water resource infrastructure, strategic planning and coordination
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**Housing & Urbanization**
- What we do: guarantee housing access and develop urbanization in low income districts
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OUR WATER RESOURCES STRATEGIC PLAN

Pillars of our Water Policy

- Water & Sanitation
- Climate hazards
- Water for production
- Multi-purpose

Preservation of water resources
Strengthen capacities
Innovation
Participation
OPPORTUNITIES FOR PRIVATE SECTOR

1. Water & Sanitation
2. Water for production
3. Multi-purpose

Pillars of our Water Policy

Preservation of water resources
Strengthen capacities
Innovation
Participation
100% DRINKING WATER & 75% SEWAGE

Pillars of our Water Policy

1. Water & Sanitation
2. Climate hazards
3. Multi-purpose
4. Water for production

Main objectives

- 100% access to drinking water in urban areas
- 75% sewage system penetration in urban areas
- 85,000 kms. of new aqueducts
- Operator’s financial sustainability

Preservation of water resources
Strengthen capacities
Innovation
Participation
3 KEY CHALLENGES MUST BE OVERCOME

Lack of investment
- Low public investment when compared to needs for improvement
- Public investment wrongly allocated
- No private investment since 2005

Governance & transparency deficit
- Absence of a strategic plan for water & sanitation
- Poor national coordination and support
- Lack of sectorial benchmarks and indicators

Financially unsustainable operators
- Operators subsidy-dependent
- Outdated tariffs
- Low consumption measurement
- Lack of operators management control

- 100% of safe water penetration
- 75% of sewage penetration
2016-2022 INVESTMENTS: US$ 21.6B

PUBLIC FUNDING AND INTERNATIONAL LOANS

- Infrastructure investment to extend safe water and sewage penetration
- Development of sectorial information system
- Consumption micro and macro measurement

PRIVATE SECTOR INVESTMENTS

- Wastewater treatment plants BOT contracts
- Supply for infrastructure investment:
  - 85,000 kms. of new aqueducts
  - Additional micrometers
  - Telemetry
  - Water quality lab analysis

Planned investment for National Water & Sanitation Plan (% of GDP, 2016-2022)

**Investment (US$ Bn)**

<table>
<thead>
<tr>
<th>Year</th>
<th>2005-2015 avg.:</th>
<th>2016-2022 avg.:</th>
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<td>3.2</td>
<td></td>
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<tr>
<td>22</td>
<td>1.2</td>
<td></td>
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Source: Sec. Obras Públicas based in OSN, AASA, ENOHSA & PNAyS
WATER RESOURCES SECRETARIAT (WRS)

**W&S service suppliers**
- Operators
- Municipalities
- Cooperatives
- State companies

**Government entities**
- ENHOSA
- Water Fund
- DINAPREM
- Plan Belgrano
- Aysa

**WRS main objectives**
- National W&S strategic plan
- Multilateral agencies loan management
- National support programs for operators
- Sectorial benchmark & transparency indicators
ARGENTINA'S MAIN OPERATORS' FINANCIAL SUSTAINABILITY

Solutions for financial deficit...

1. Adjust tariffs to inflation and operational costs
2. Increase consumption measurement
3. Make state-owned companies efficient

Argentina's main operators' financial sustainability (billing/operational costs, %)

% of population served

Source: Sec. Obras Públicas; Note: * for operators studied
Argentina’s main operators financial sustainability (billing/operational costs, %)

Recent tariff increases have improved AMBA’s position to 80-85%

% of population served

Solutions for financial deficit...

1. Adjust tariffs to inflation and operational costs
2. Increase consumption measurement
3. Make state-owned companies efficient

Source: Sec. Obras Públicas; Note: * for operators studied
IRRIGATION: EXPAND AREA BY 1 MHA

Main objectives

- Increase irrigated area by 1 Mha.
- Increase agricultural yield
- Develop local economies with multipurpose projects
- Encourage private-public partnerships

Pillars of our Water Policy

- Water & Sanitation
- Climate hazards
- Water for production
- Multi-purpose

Preservation of water resources
Strengthen capacities
Innovation
Participation
IRRIGATION: KEY CHALLENGES

• **Full-potential:**
  - Triple irrigated area (from 2.1 Mha to 6.2 Mha)
    - First stage: Add 1 Mha of agricultural productive land

• **Current situation:**
  - Supplementary irrigation systems with very low penetration
  - Irrigation systems efficiency with potential for improvement
  - Lack of integrated strategies between different provinces
LEGISLATION FOR PRIVATE INVESTMENT

Provinces → Private Investors → National Government

Integrate

Independent corporation

Manages

Trust fund (mixed ownership)

Issues

Bonds traded in the public market

Land owners
- Pay for improvements
- Give part of their land
- Future sale options

Possible with current legislation

Key enabler: reduce risk for investors
- Potential National or province laws in study

Possible with current legislation
MULTIPURPOSE PROJECTS

Main objectives

- Regional economic development
- Preventing floods
- Water supplies for irrigation and production
- Tourism and recreation development
- Energy generation

Pillars of our Water Policy

- Preservation of water resources
- Strengthen capacities
- Innovation
- Participation

Water & Sanitation
Climate hazards
Water for production
Multi-purpose
**PPP: OPPORTUNITIES AND PLAN**

**Main objectives**

- US$ 2.0B private investment for Water & Sanitation projects
- US$ 4.3B private investment for Water for production projects
- Technological Innovation adoption

**Pillars of our Water Policy**

- Water & Sanitation
- Climate hazards
- Water for production
- Multi-purpose

**Preservation of water resources**

**Strengthen capacities**

**Innovation**

**Participation**
## PPP: Regulation and Legislation

### Key Factors for PPP Success

<table>
<thead>
<tr>
<th>Contract Type</th>
<th>Government Measures</th>
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<tbody>
<tr>
<td></td>
<td>- Legal Security</td>
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<tr>
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<td>- BOT and other options being analyzed</td>
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<tr>
<th>Public Support</th>
<th>Government Measures</th>
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<tbody>
<tr>
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<td>- Organization of national and regional workshops</td>
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<tr>
<td></td>
<td>- Agreements signed with each province/region included</td>
</tr>
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<table>
<thead>
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<td>- Legal assurances</td>
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<td>- Taxes</td>
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<tr>
<td></td>
<td>- Specific subsidized credits</td>
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</table>

<table>
<thead>
<tr>
<th>Financial Viability</th>
<th>Government Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Economic &amp; technical analysis</td>
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INVESTMENTS OF US$42.5B BY 2022

Investments in water & sanitation + adaptation to climate change + multipurpose + irrigation needed to fulfill 2020 plan
(US$ B, 2016-2022)

- $8.2B for Drinking Water
- $13.4B for Sewage
- $10.0B for Climate Hazards
- $6.7B for Multipurpose
- $4.3B for Irrigation
- $42.5B for Total

75% of urban population with household sewage system
1 Mha. new irrigated areas for production
100% of urban population with access to drinking water
INVESTMENT OPPORTUNITIES

Presented by Pablo Bereciartua, Undersecretary of Water Resources
USD 750M in tenders to be launched in 2016 for three electricity generation plants using existing organic, sewage and industrial waste as a fuel source

Opportunity Overview

- Three USD 250M electricity generation plants in core locations of the Greater Buenos Aires area (Zona Sur, Zona Norte, Zona Oeste)
- Generation plants will use organic household waste, industrial waste and sewage waste as fuel sources.
- Global examples: Clermont Ferrand (France), Ecopark (Barcelona), Monsal (UK), Vittoria (Italy)

Investment & Tender Details

- **Amount:** USD 750M (3x 250M)
- **Opportunity type:** public-private partnership (financing & operation)
- **Company type sought:** EPC company
- **Duration:** 24 months
- **Concession duration:** 20 years
DRINKING WATER: LA PAMPA & CATAMARCA

Nationwide tenders to be launched for the construction and extension of aqueducts for the provision of drinking water

Opportunity Overview

• La Pampa: 140km aqueduct between Santa Rosa and General Pico to extend the Rio Colorado Aqueduct and provide drinking water to communities north of the city of Santa Rosa (includes secondary pipes for local communities)
• Catamarca: Estimated USD 64 Mn aqueduct for the communities of El Bolsón, Vallecito Frías, Quiros, San Antonio, Recreo, Esquiú and La Guardia

Investment & Tender Details

• Amount: USD 184M (USD 120M + USD 64M)
• Opportunity type: public-private partnership (financing & operation)
• Company type sought: EPC company
• Duration: 36 months (in both cases)
• Purpose: Provision of drinking water to communities, the project in Catamarca will have a portion destined to irrigation as well
Tenders to be launched to refurbish and extend the sewage system in the country

**Opportunity Overview**

- USD 56M for the refurbishment and extension of the Mendoza sewage system
- Sewage plant expansion through the construction of optional air lagoons (1,000 extra liters/sec)
- Construction of 20.6K meters of sewage pipelines to completely refurbish the sewage collection network
- Construction of a new pipeline of 4.6K meters to distribute the treated water

**Location**

Greater Mendoza city area

**Investment & Tender Details**

- **Amount:** USD 56M
- **Opportunity type:** public-private partnership (financing & operation)
- **Company type sought:** EPC company
- **Duration:** 48 months
- **Purpose:** improved sewage services for urban communities
- **Reach:** 300K people
IRRIGATION: VALLE NEGRO MUERTO

Tender to be launched for an *irrigation system to integrate an extensive undeveloped valley in Río Negro* into the wider Río Negro economy.

**Opportunity Overview**

Construction of a holistic irrigation system with a total investment of USD 702.8M, including the construction of:

- A diversion dam
- 14km canal between dam and irrigation area
- Secondary and tertiary canals in irrigation area
- Distribution point infrastructure

**Location**

Valley in the northern section of Río Negro river

**Investment & Tender Details**

- **Amount:** USD 702.8M
- **Opportunity type:** public-private partnership (financing & operation)
- **Company type sought:** EPC company
- **Duration:** 24 months
- **Water source:** Río Negro
- **Area impacted:** 70.7K hectares
Tender to be launched for an irrigation system to transform the semi-arid lower Limay river valley into one apt for agricultural production

**Opportunity Overview**

Construction of a holistic irrigation system with a total investment of USD 29.9M, including the construction of:
- A diversion dam
- Canal between dam and irrigation area
- Secondary and tertiary canals in irrigation area
- Distribution point infrastructure

**Investment & Tender Details**

- **Amount**: USD 29.9M
- **Opportunity type**: public-private
- **Company type sought**: global EPC company
- **Duration**: 24 months
- **Water source**: Rio Limay
- **Area impacted**: 12.1K hectares
Tender to be launched for an irrigation system in the lower valley of the Chubut River to benefit agricultural producers in the valley.

Opportunity Overview

Construction of a holistic irrigation system encompassing 35K hectares with a total investment of USD 341.5M, including the construction of:
- A diversion dam
- 70km canal between dam and irrigation area
- Secondary and tertiary canals in irrigation area
- Distribution point infrastructure

Investment & Tender Details

- **Amount:** USD 341.5M
- **Opportunity type:** public-private partnership (financing & operation)
- **Company type sought:** EPC company
- **Duration:** 24 months
- **Water source:** Chubut river
- **Area impacted:** 35.0K hectares
Tender to be launched for a multipurpose dam to **control the flow of the Grande and Colorado rivers, while generating** electricity and providing better irrigation.

**Opportunity Overview**
- Construction of a multipurpose dam with a total investment of USD 600M, for the following purposes:
  - Irrigation
  - Renewable energy generation (210MW)
  - Flood protection
  - Tourism

**Investment & Tender Details**
- **Amount:** USD 600M
- **Opportunity type:** public-private partnership (financing & operation)
- **Company type sought:** EPC company
- **Duration:** 61 months
- **Rivers affected:** Río Grande & Río Colorado

**Location**
West of the city of Mendoza
**ENERGY: POTRERO DEL CLAVILLO**

Tender to be launched for a multipurpose dam to **control the flow of the Gastona and Medina rivers**, while generating electricity and providing better irrigation.

**Opportunity Overview**

- Construction of a multipurpose dam with a total investment of USD 700M, for the following purposes:
  - Irrigation
  - Renewable energy generation (123MW)
  - Flood protection

**Location**

Between Tucumán and Catamarca provinces

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**Investment & Tender Details**

- **Amount:** USD 700M
- **Opportunity type:** public-private partnership (financing & operation)
- **Company type sought:** EPC company
- **Duration:** 54 months
- **Rivers affected:** Río Gastona & Río Medina