



شركة المياه الوطنية
National Water Company

Promoting Water Reuse in the KSA

*Presentation to the Singapore International Water Week 2010
Suntec Singapore International Convention & Exhibition Center
28 June - 2 July 2010*

Content



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2. Transition Challenges
3. NWC's Strategy
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5. Progress of Management Contracts
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Saudi Arabia Facts

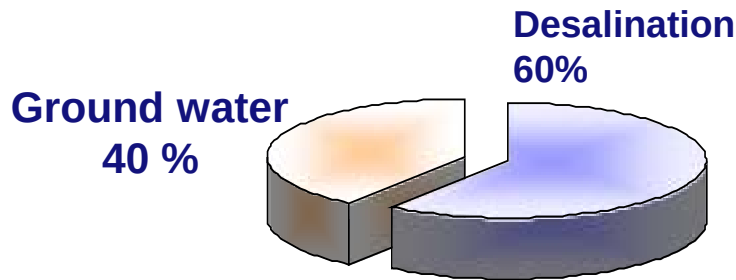


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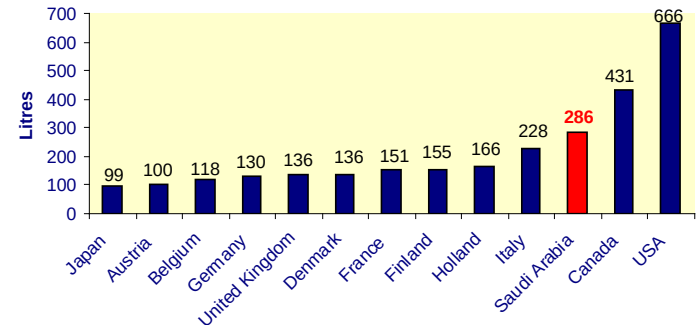
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- Saudi Arabia
 - Total area : 2.15 Million Sq. KM
 - Estimated Population : Around 25 Million
 - Annual Population Growth : 3 %
- Saudi Arabia is listed under “**absolute water scarcity**” category (i.e. will NOT be able to meet needs in 2025)

Urban water supply – 5.72 Million M3 per Day



Comparison of Water Usage
(Domestic) liters / capita / day



Historically, the water sector suffered from substandard operations and inadequate infrastructure with growing demand and depleting resources



Substandard service levels

Systematic rationing and water shortages compared to continuous supply of water (24/7) in other developing cities such as Shanghai



Poor infrastructure

~30% in water leakage, less than 50% of population in Riyadh and Jeddah with access to sewage collection network



High per capita consumption rate

Riyadh consuming ~60% more water per capita than major European cities and ~25% more than neighboring GCC cities



High dependency on non-renewable water

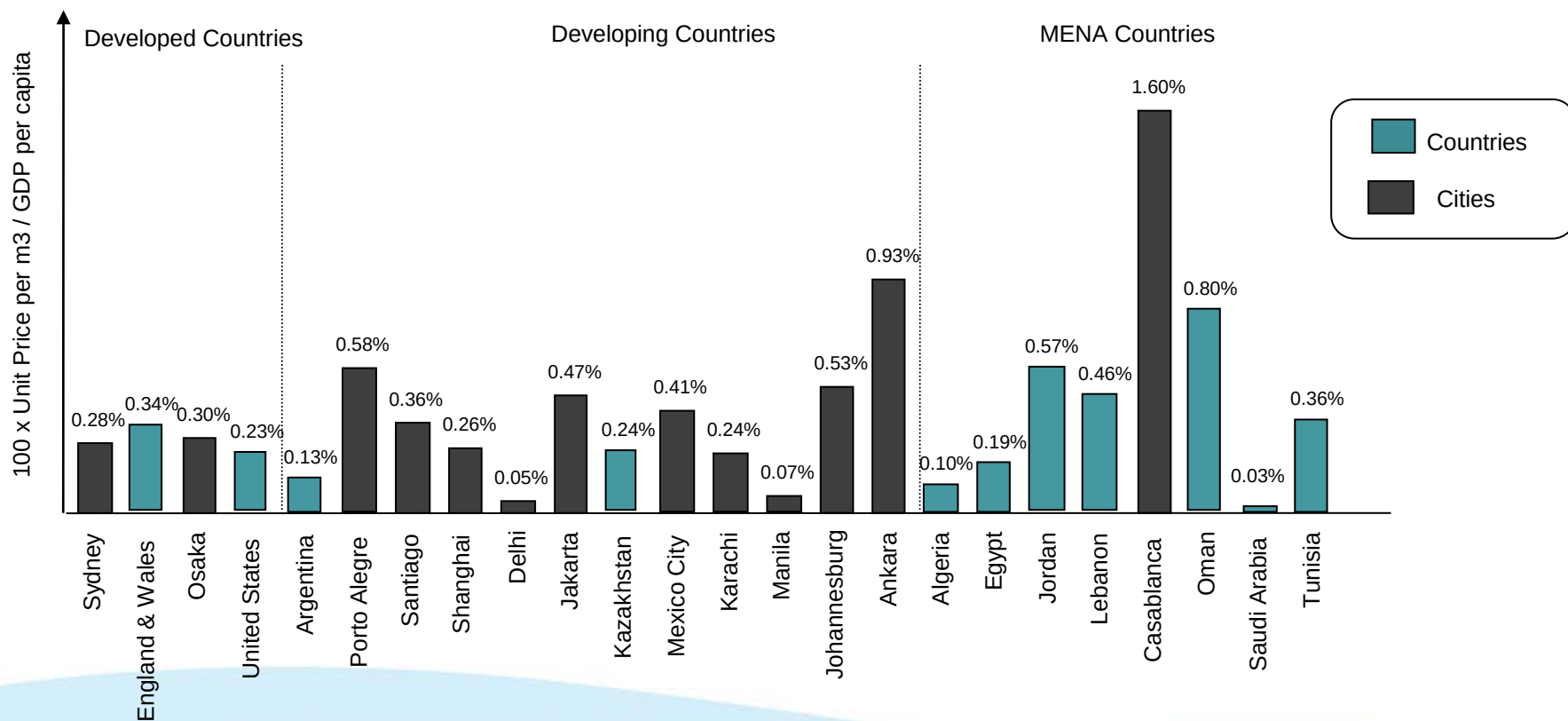
Major Portion of total consumption in the Kingdom comes from non-renewable water reserves



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Tariff for Average Consumption as % of GDP Per Capita (Adjusted For Purchasing Power Parity)



Source: OECD, OFWAT, World Bank, ADB, Global Water Intelligence, individual water utilities

About NWC



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NWC has been Established vide Royal Decree no. M/1. January.2008

- NWC has a capital of 5.9 billion USD
- NWC's operational responsibilities include underground water production & treatment, Water Distribution management, customer service, wastewater collection, treatment & Disposal, etc.
- NWC started its operation from 01.June 2008 in Riyadh and Jeddah cities
- Makkah/ Taif Cities awarded. NWC Operation will start soon.
- NWC will very shortly takeover the management of water & wastewater services in Dammam, Alkhobar, and Madinah Cities.
- NWC targeted to take over operations of 15 cities during next 3 years.
- NWC will manage all privatization initiatives and facilitate private sector participation
- NWC is bringing aggressive changes in urban water & wastewater sector based on a sound commercial basis



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Transition Challenges



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Short to Medium-Term Challenges

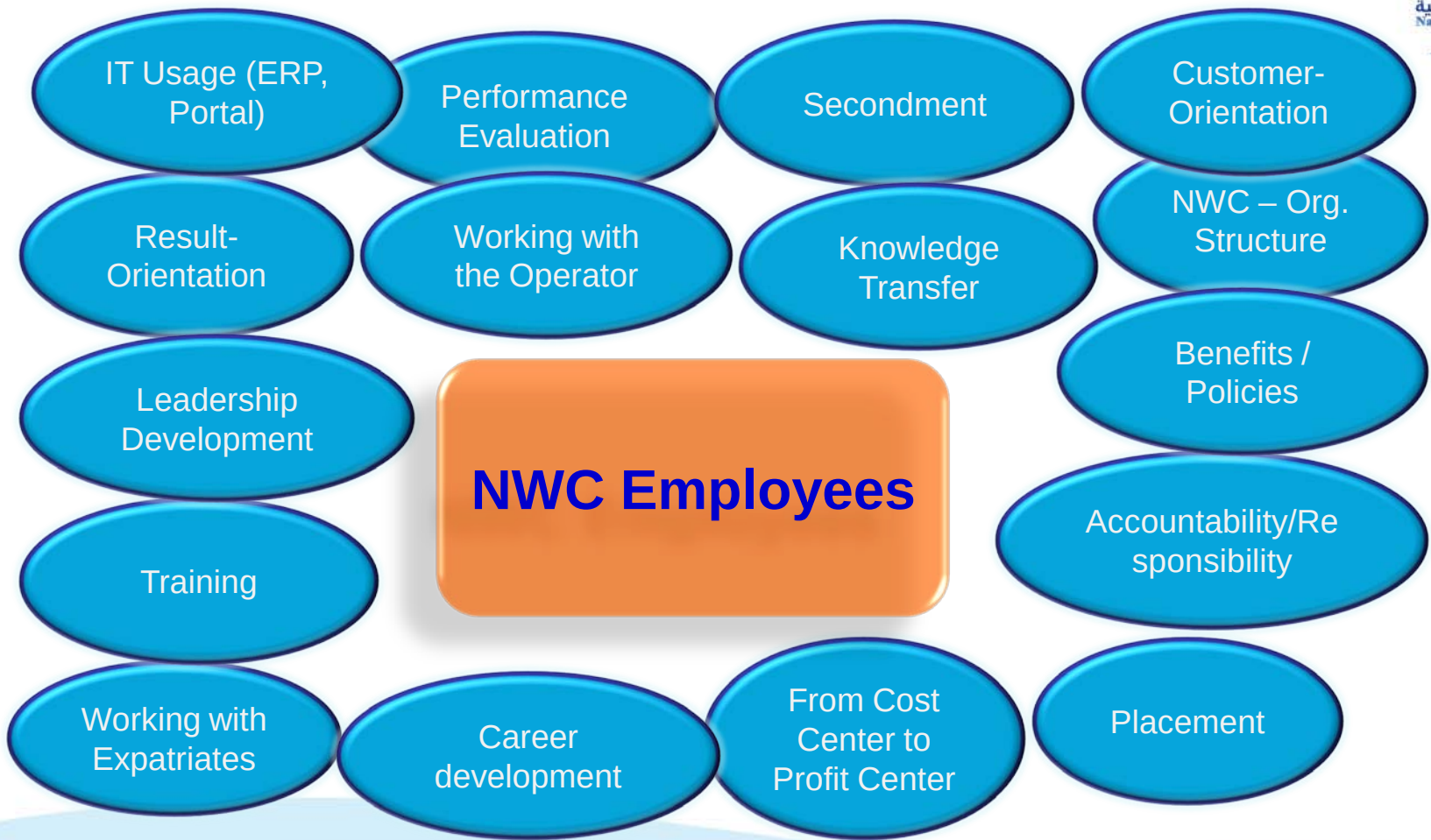
- Setting up an effective organization with the right mix of executive teams, integrate them into the new environment
- Designing the organization structure of NWC to satisfy its Vision
- Developing existing work force (more than 6000 employees), knowledge transfer, adopt new skills
- Changing culture, attitude/behavior, changing from Government sector to a customer oriented organization
- Implement short to medium term business development and diversification initiatives
- Enhance management transformation, towards a self-sustaining business model

Long-Term Challenges

- Regulatory management
- Urban water & WW services expansion, and addressing water shortages (Gap in supply VS demand)
- Sustainable development, financial sustainability due to low tariffs

Example Challenges / Issues : NWC employees

(Cultural, Attitude, Behavioral)





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Strategy Summary



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- O Objectives:** To become a leading water utility in the region, adopting best practices. Expand locally and regionally, leverage knowhow, and achieving economies of scale.
- O Possible strategic development:**

	Horizon 1 Build the Organization and expand locally	Horizon 2 Become a leading Water Utility in the Region
Timing	Short-medium term (within next 3years)	Long term (in 4-7 years)
Priorities	- o Set up the organization and strengthen all key functions (people), processes, and systems - o Define and implement the optimal business model - o Define and implement regulatory management strategy - o Improve operations (quality, efficiency, cost) - o Expand locally(Additional cities/ regions)	- o Expand Regionally - o Develop new projects - o JV / spin off Business unit once attractive

NWC preferred Option of Sector Unbundling



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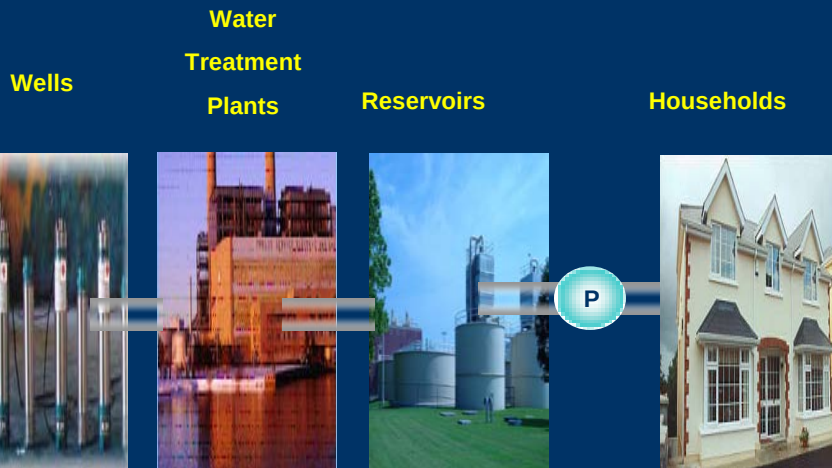
Water distribution and wastewater collection

Wastewater treatment and Reuse

Management Contract (short – medium Term)

WWTP

TSE



Pumping, Treatment and O & M

Pumping, Treatment,
Transmission, Storage,
Distribution and Sewage
Collection

Existing Wastewater
Treatment Plants



Future WWTP based on
BOO basis



Agriculture

District cooling

Industries

Public Parks

Aquifer recharge

Non-potable use



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Significant improvement towards continuous water supply in both Riyadh and Jeddah



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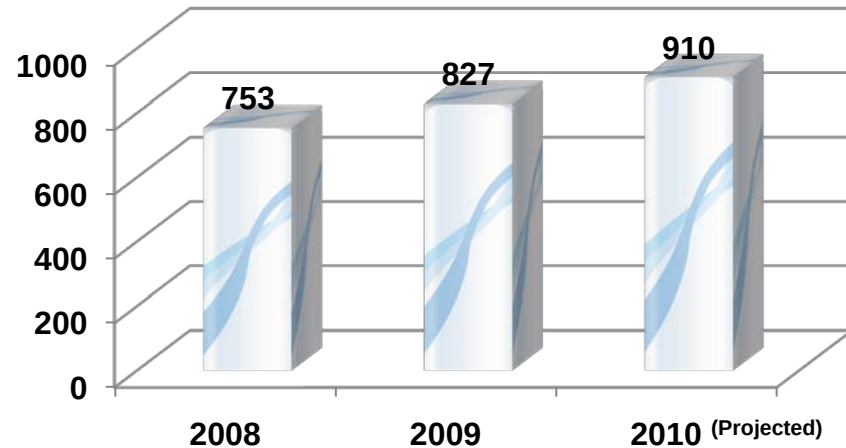


BOWAYB & SALBOUKH WATER TREATMENT PLANTS
R.O. BUILDING



BOWAYB & SALBOUKH WATER TREATMENT PLANTS
LIME CLARIFIERS

In Million m³



Source: NWC Plan Achievement Reports JCBU/ RCBU



Increased Sewage connection by approximately 50%; more than 40,000 houses connected in both Riyadh & Jeddah

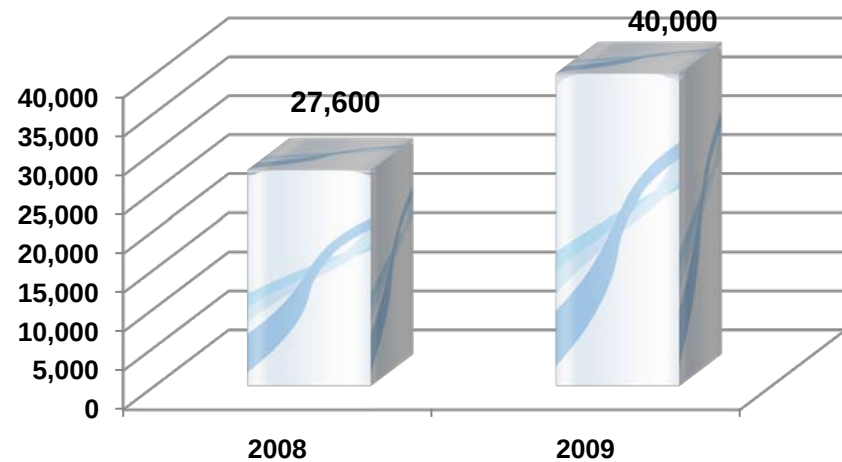


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Number of Sewerage House Connections



Source: NWC Plan Achievement Reports JCBU/ RCBU

Capital Projects delivery period accelerated from 5 to 2 years

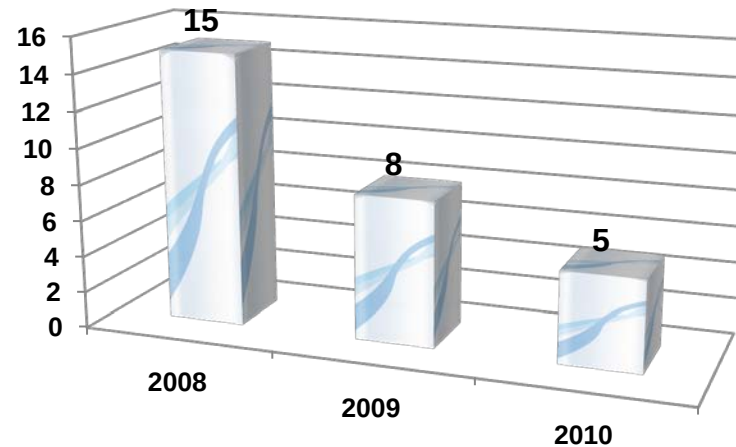


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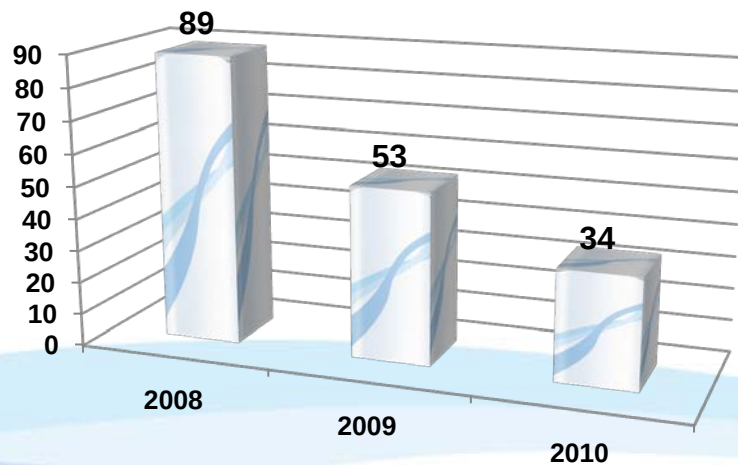
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Number of Delayed Projects (Jeddah)



Number of Delayed Projects (Riyadh)





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Privatization Programs

- Water Services and Sewage Collection
- Wastewater Treatment Plants and Treated Sewage Effluent Reuse

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Privatization Targeted Cities



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City	Population	% of KSA population	Daily potable water supply (M3/day)	% of KSA total potable water supply	Status
Riyadh	4,583,764	18.35 %	1,403,293	28 %	Finalized
Jeddah	3,068,485	12.29 %	626,173	12 %	Finalized
Makkah	1,424,954	5.71 %	201,530	4 %	Finalized
Taif	771,123	3.09 %	116,184	2 %	
Greater Dammam	1,203,839	4.82 %	528,445	11 %	Tendering process started. Consultants Appointed
Madinah	994,175	3.98 %	281,333	6 %	
Buraida & Onaizah	567,427	2.27 %	189,111	4 %	Under Study
Khamis mushayat & Abha	642,821	2.57 %	67,362	1%	
Tabuk	507,495	2.03 %	79,842	2 %	
Jubail ,Al-Hofuf & Al mubarraj	869,660	3.49 %	255,411	5 %	
Yanbu	244,730	0.98 %	68,407	1 %	
Total (15 cities)	14,878,473	59.58 %	3,817,091	76.17 %	

Management Contract



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Objectives

- Improve operational efficiency for quick reduction in water leakage , Continuity of water supply, improve revenue collection, billing & metering, training, customer services, coverage, etc
- **Major Scope of performance based Management Contract Services :**
 - 6 to 7 years Performance based Management Contract
 - Water production & Treatment, Distribution and Wastewater services
 - NRW reduction
 - Customer services
 - Training Program for Employees
 - Implementation of IT systems (GIS, SCADA, CRM, AMR Asset Management)
- **Performance standards & incentive KPIs**
 - Target performance standards
 - Incentive KPIs
 - Quick Wins--Performance bonus for implementing within a period of 12 to 24 months)

Progress of Management Contract

(Greater Dammam, Madinah)



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City	Pre-Qualification	Date of RFP Release	Tentative date for awarding Management Contract
Greater Dammam	July 2009	Sep 2009	Will be completed by 2010-11 in a phased manner
Madinah		Nov 2009	

More than ten leading international water operators have already expressed their keen interest to participate in the tendering process

INVESTMENT FORECAST IN RIYADH AND JEDDAH (CAPEX) in Billion SAR



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Projects	2010	2011	2012	2013	2014	TOTAL	Remark
Water	5.8	3.0	2.1	2.0	2.0	14.9	(6.5) plants (8.4) network
Waste Water	4.5	3.5	2.5	2.3	2.0	14.8	(3.3) Plants (11.5) network
TOTAL	10.3	6.5	4.6	4.3	4.0	29.7	TOTAL

Anticipated Investment required SR 34 Billion by 2014 in the other targeted Cities

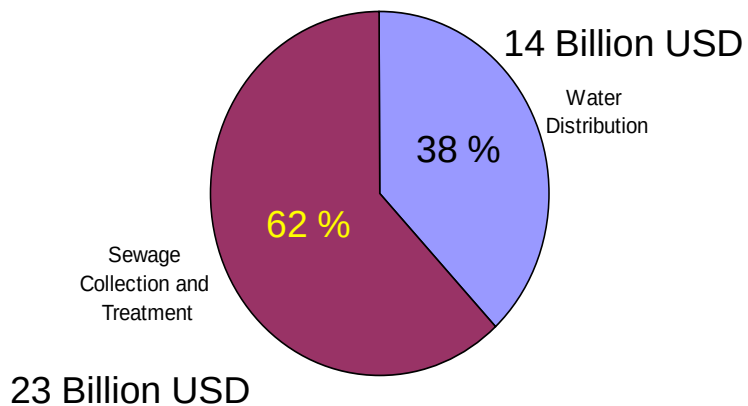
Requirement for 100 % coverage in Saudi Arabia for next 20 years



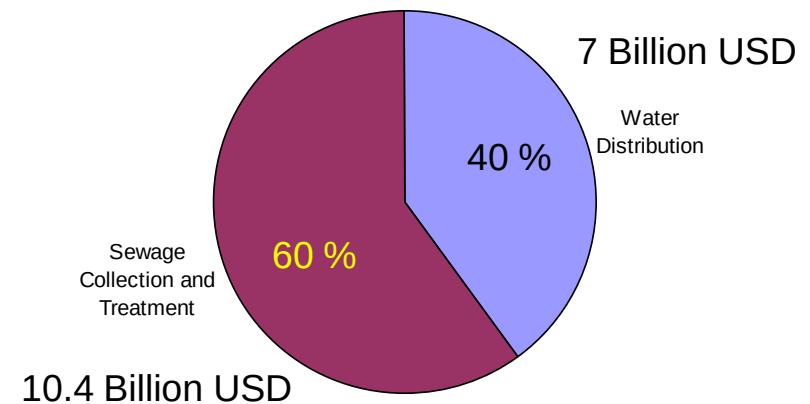
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Total CAPEX - 37 Billion SR



Total OPEX – 17.4 Billion SR





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Business Opportunities

in Water, Wastewater & TSE



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- PPP contracts – Management / O & M of urban water & sewage operations in major cities
 - *Two cities will start during next 2 months in a phased manner and will be completed during 2010*
 - *Nine cities which are under study and will be covered during next 3 to 5 years*
- Infrastructure requirements in major cities under privatization
- Average CAPEX 2.4 Billion USD per year over next 16 years
- Consultancy and technical studies opportunities
- ICT – Implementation of ERP and technology solutions
- Building New wastewater treatment plants on Build Own Operate (BOO) basis in major cities
- Rehabilitate, operate & transfer of existing wastewater treatment plants
- Re-use of treated water and sludge on commercial basis

Concept of TSE reuse



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- NWC has started a major initiative for utilization of treated sewage effluent (TSE) for non potable purposes in major cities like Riyadh, Jeddah, Medina & Makah cities
- NWC has identified major market in these cities for TSE reuse in industries, Commercial district cooling, Public parks, Landscaping, Agriculture etc,
- The benefits of this reuse includes
 - ✓ Reduction in environment impact
 - ✓ Helps in augmenting the potable water supply
 - ✓ Helps in commercial sustainability of NWC
 - ✓ Protection of natural ground water resources (non-renewable water resources)
- At present in KSA, only around 18 % of the treated sewage effluent is reused

Project Concept

WWTP and TSE business development initiative



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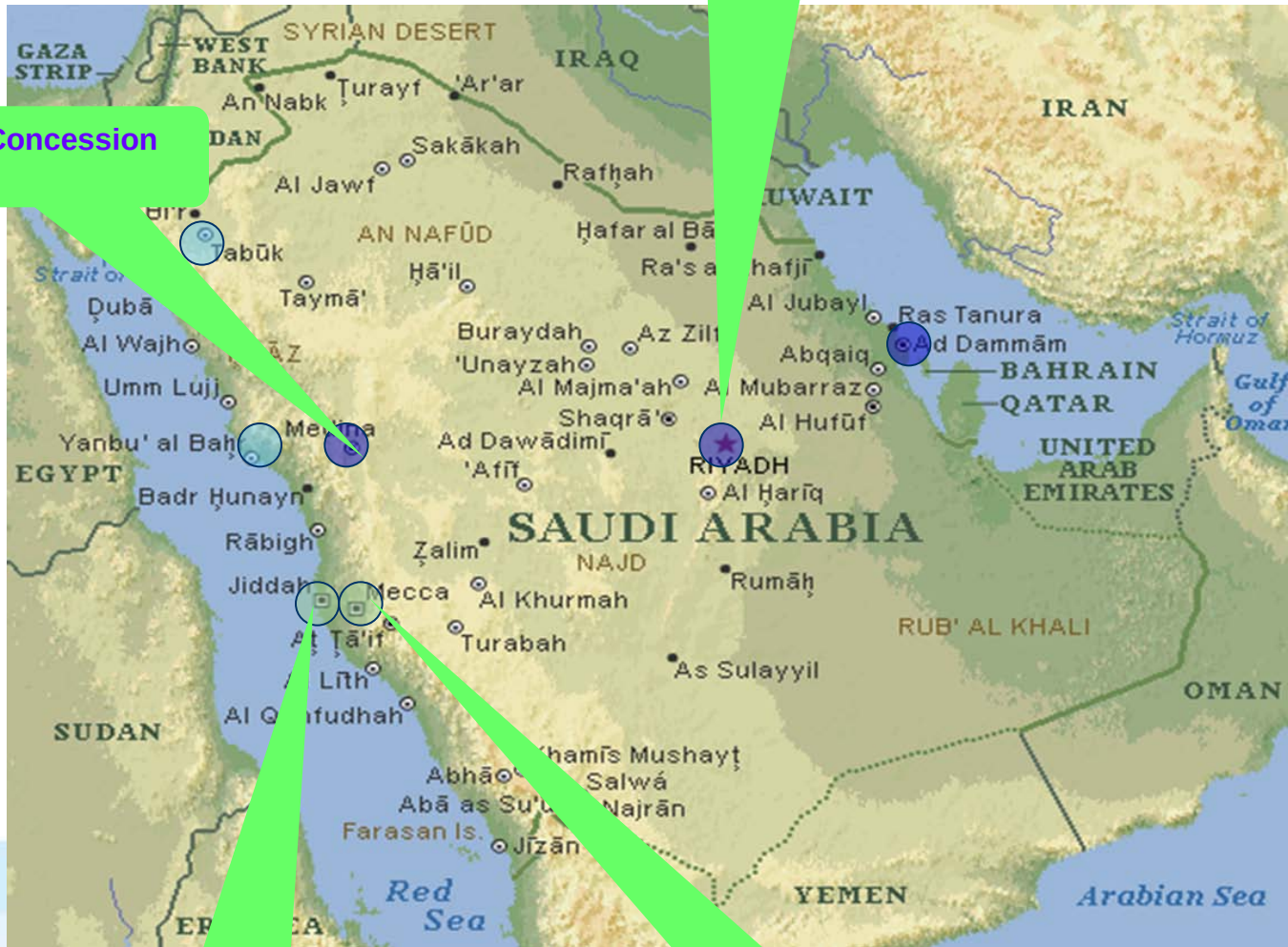
- NWC studying the prospect of privatization of the WWTP/ TSE business initially at Riyadh.
- The Project includes a mix of “brownfield” and “greenfield” assets
- Brownfield assets will be transferred, for value to the relevant Project Company (SPV).
- Greenfield assets to be financed by the project company.
- NWC, along with private investment will participate in equity of the project company (SPV)
- Raw Sewage Agreement between NWC and SPV
- Preliminary market sounding resulted in many bidders /investors expressing their willingness to participate in a concession project/s.

Project Locations



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Riyadh-- WWTP :
BOO/Concession

Madinah- Concession

Jeddah- WWTP :
BOO/Concession

Makkah- Concession

Wastewater Treatment Plants in Riyadh and Jeddah Cities (Short Term plan)



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City	Location	Plant	Design Capacity	Status
Riyadh	Al-Kharj Road (Package – 1)	Phase-1	100,000	In Operation (Sales)
		Phase-2	100,000	Under Construction (Forward Sales)
		Phase-3	100,000	Under Construction (Forward Sales)
	Al-Hayer (Package – 2)	Phase-1	400,000	Under Construction (Forward Sales)
		Phase-2	400,000	On BOO basis
	Manfouhah		600,000	In Operation (Sales)
Jeddah	Al-Khumrah	Phase-1	40,000	In Operation
		Phase-2	60,000	In Operation
		Phase-3	140,000	In Operation
		Phase-4	250,000	Under Construction
	Package Plants		99,000	In Operation
	Airport	Phase-1	250,000	Under Construction
		Phase-2	250,000	On BOO basis

Wastewater Treatment Plants in Makkah, Madinah Greater Dammam Cities



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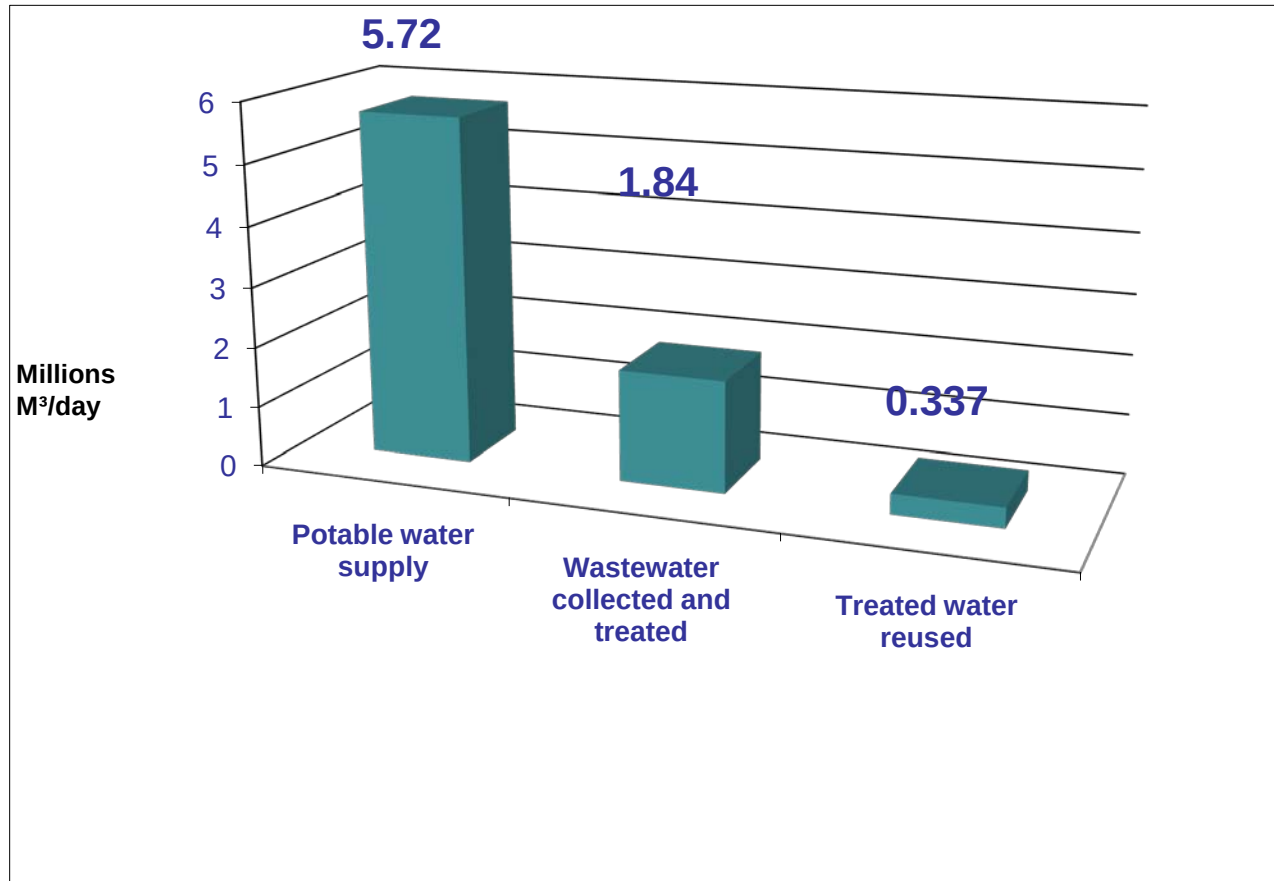
City	Location	Design Capacity (M3/day)	Status	Remarks
Madinah		300,000	In Operation	RFPs will be issued after completion of Jeddah city WWTP tendering process
Makkah	Akashiya No. 1	30,000	In Operation	
	Akashiya No. 1	40,000	In Operation	
	Hadda	125,000	Under Construction	
	Arana	250,000	Under Construction	
Greater Dammam	Dammam	193,000	In Operation	
	Al-Khobar	290,000	In Operation	

Treated Water Re-use Statistics (KSA)



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REUSE – 337,000 m³/day= 6 % of potable supply 18 % of treated water

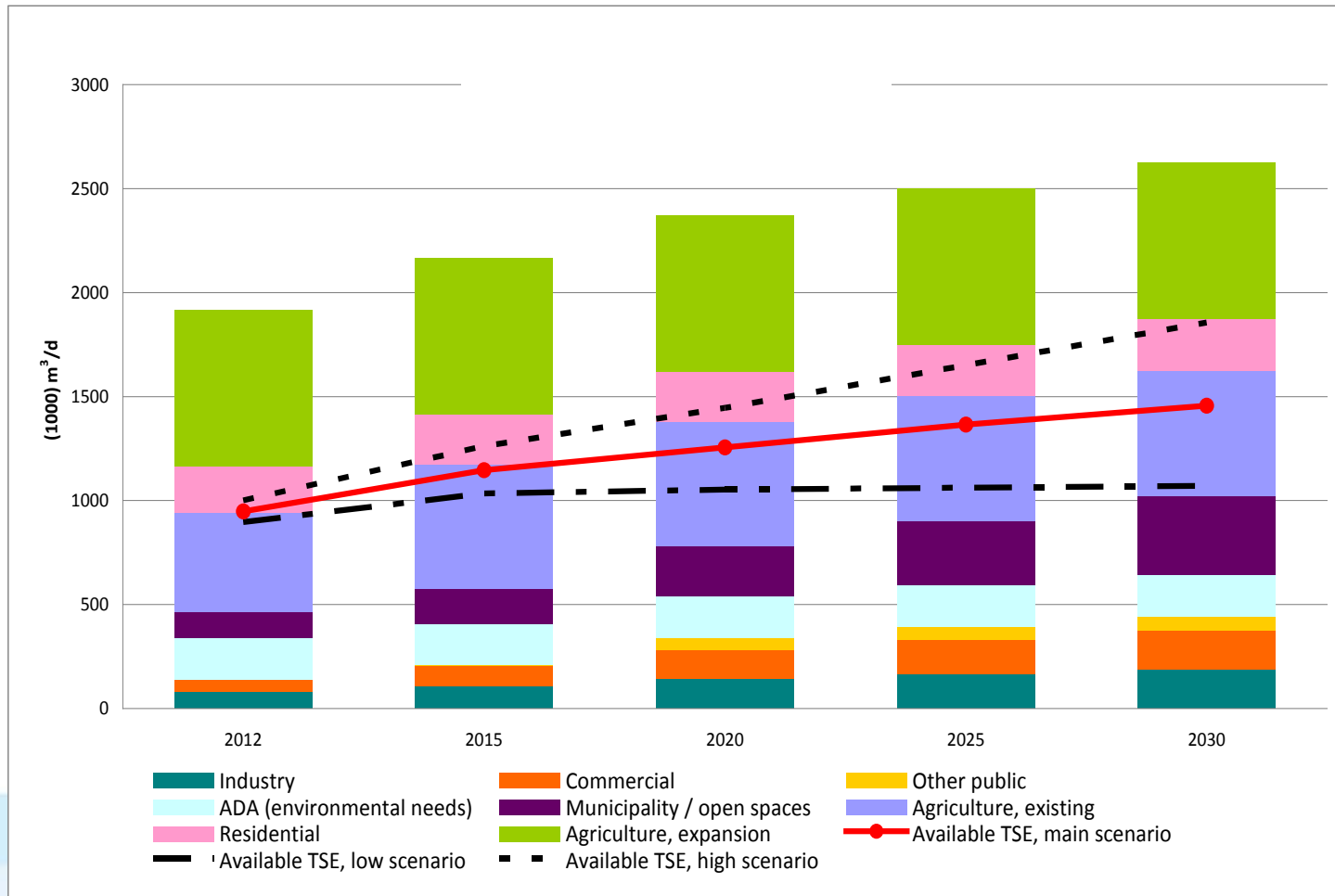
Source: Based on Initiatives for Privatizing Saudi Arabia's Wastewater Sector presentation delivered by H.E. in the Wastewater Reuses Conference in Abu Dhabi, 10th December 2007

Total TSE vs Total Requirement



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- Total requirements substantially exceed available TSE quantities

Projected Requirements

- Major part of industrial demand for TSE is already known (Saudi Aramco; companies in Industrial City Al Kharj Road and vicinity; SEC)
- Additional industrial demand for TSE will emerge in line with overall economic and industrial development

Demand Area (in m ³ /d)	2012	2020	2030
Saudi Aramco	20,000	30,000	30,000
Known industries	51,000	52,333	54,000
SEC	10,000	30,000	30,000
Additional Industries	0	33,824	75,000
Total industrial demand	81,000	146,157	189,000

Projected Commercial Demand



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- Majority of commercial demand results from district cooling
- Many district cooling projects already known
- Additional commercial demand for irrigation

Demand Area (in m³/d)	2012	2020	2030
DC signed agreements	20,850	24,675	24,675
DC known projects	35,750	48,250	48,250
DC additional demand	0	34,256	77,075
Commercial irrigation	2,729	26,705	36,900
Total commercial demand	58,329	133,886	186,900

Projected Public Demand

Different government organizations have a demand for TSE

- Arriyadh Development Authority
- Municipality
- Public institutions

Demand Area (in m³/d)	2012	2020	2030
ADA demand for Wadi Hanifa	200,000	200,000	200,000
Municipal demand for parks&gardens	3,955	93,523	188,619
Municipal demand for road strip irrig.	6,743	48,952	95,200
Public institutions, mainly universities	0	60,742	63,748
Total public demand	210,698	403,217	547,567

Potential TSE Demand in Riyadh City



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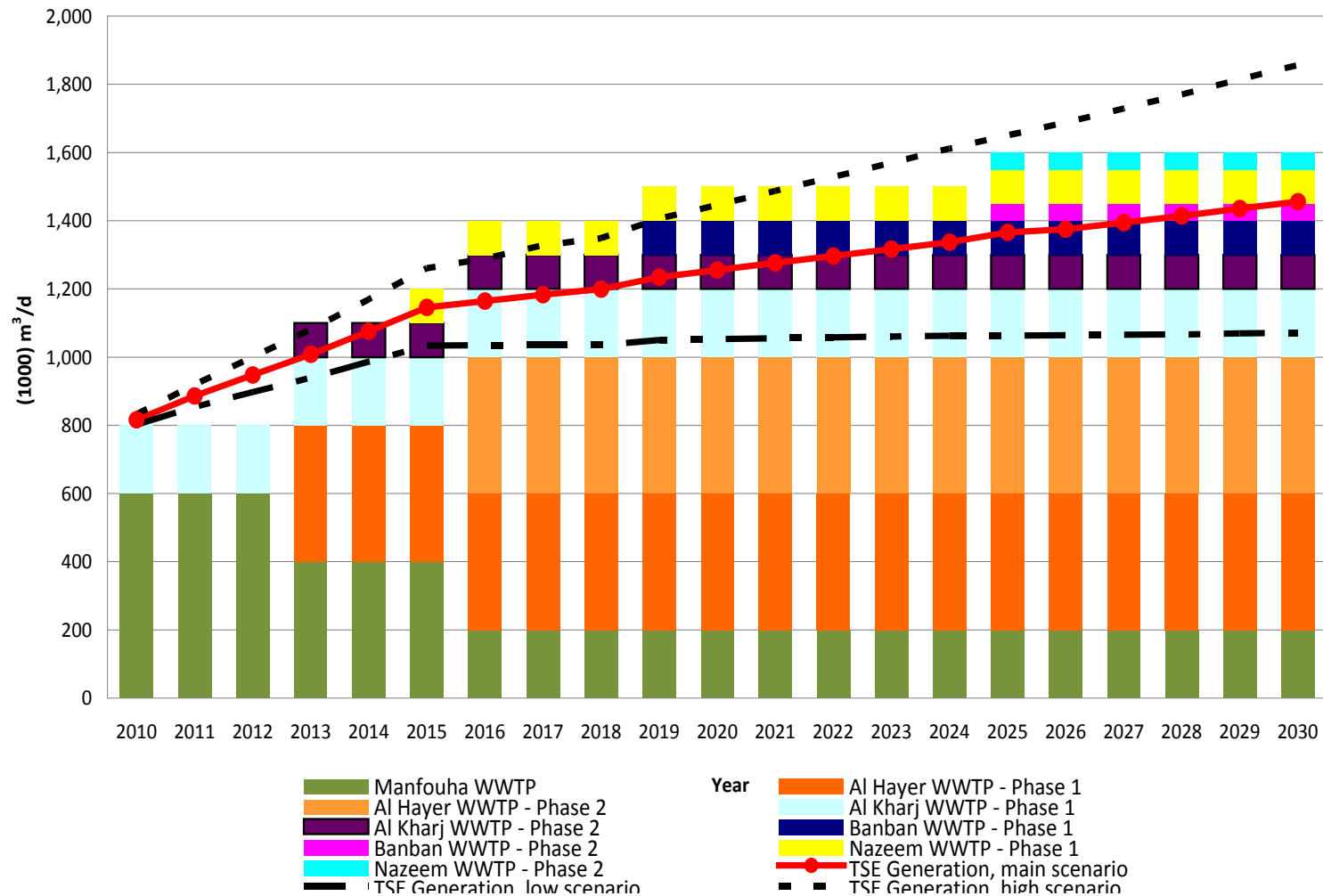
Sector	Expected TSE Demand (M3/day)
Agriculture	1,350,000
Environmental	300,000
Commercial	220,000
Industrial / District cooling	120,000
Municipal	100,000
Total	2,090,000

Grand total : 2,090,000 M3/day

Total TSE Production Qty in Riyadh City



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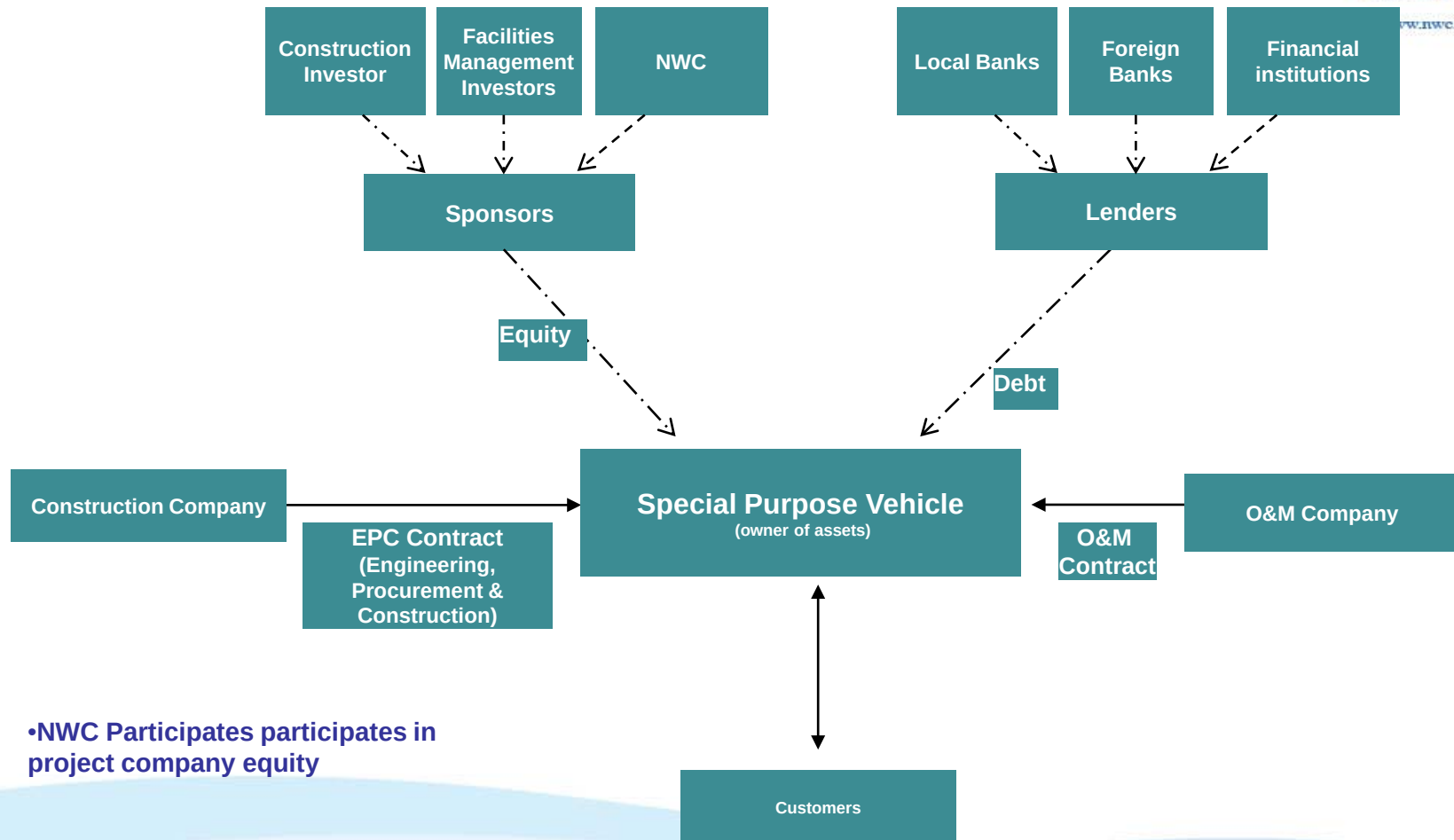


Potential SPV Structure



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•NWC Participates participates in project company equity



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Thank you