



Regulation and Supervision Bureau

Water sustainability strategies – The three phases of change

**Water, wastewater and electricity sector
Emirate of Abu Dhabi**

Jan 09

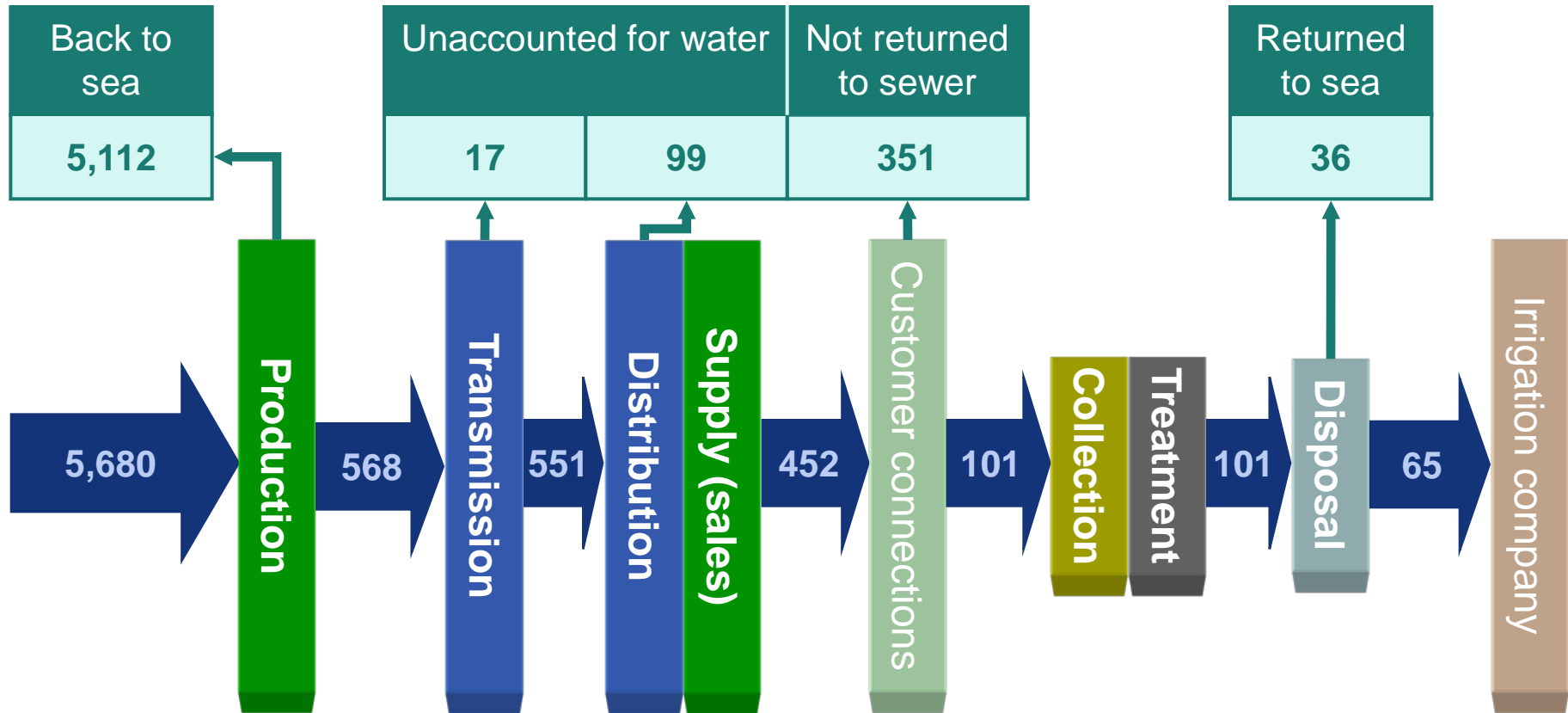
Nick Carter – Director General

A Three-Point Strategy



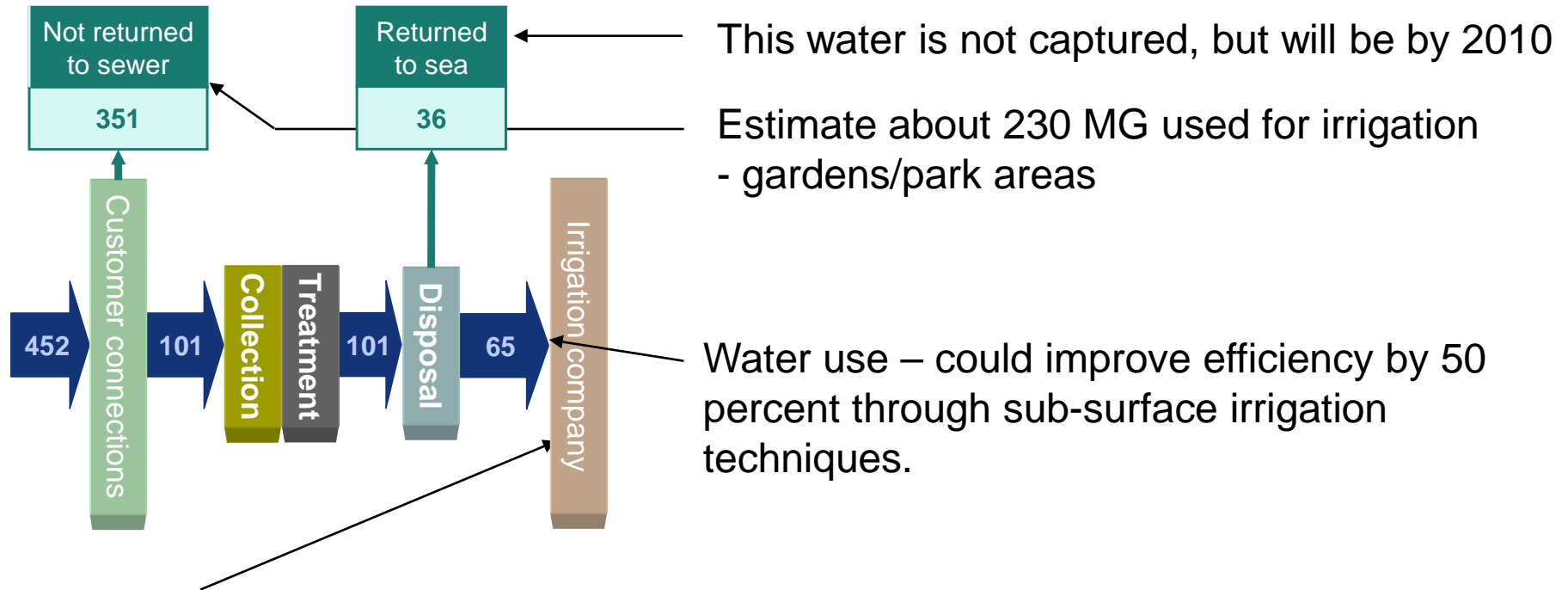
1. Re-examine the potable water cycle
2. Operator companies to reduce leaks
3. Introduce Water Wise polices

Current water use (2007)

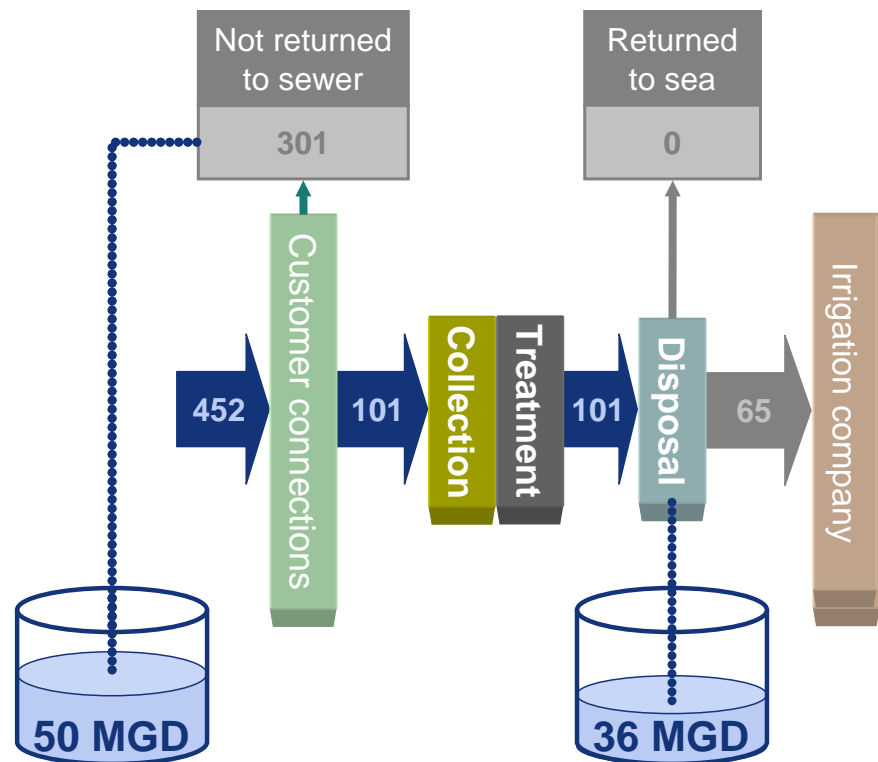


- figures in million-gallons-per-day (peak 30 August 2007)
- average water-use-per-day in 2007 was 522 MGD

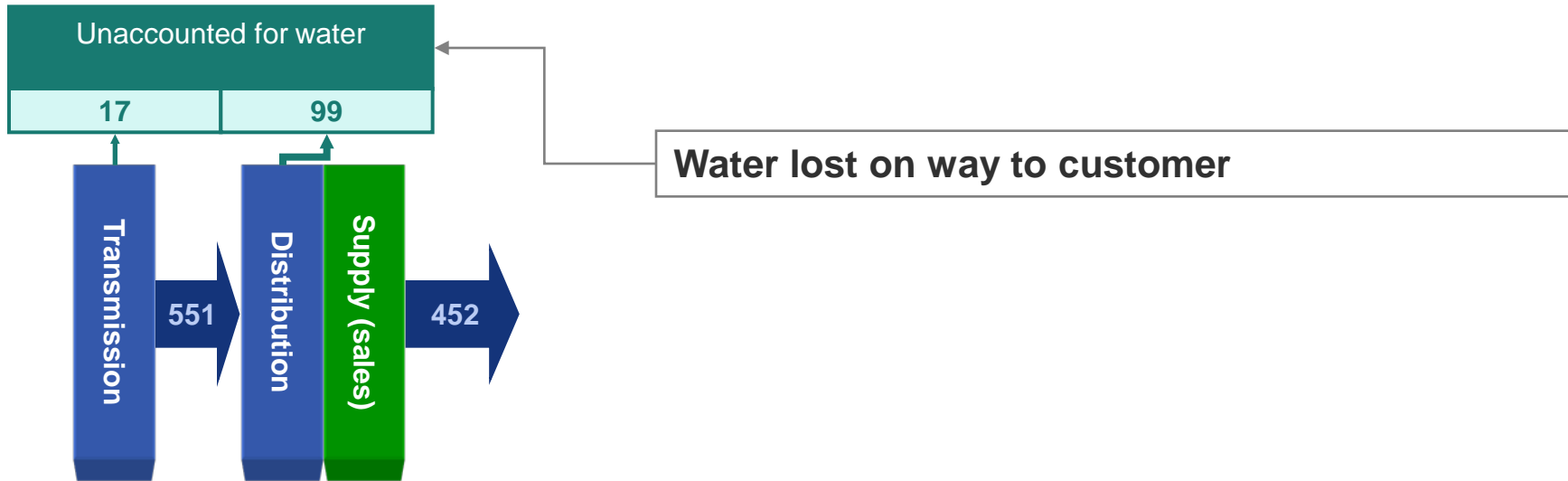
1. Current position - wastewater



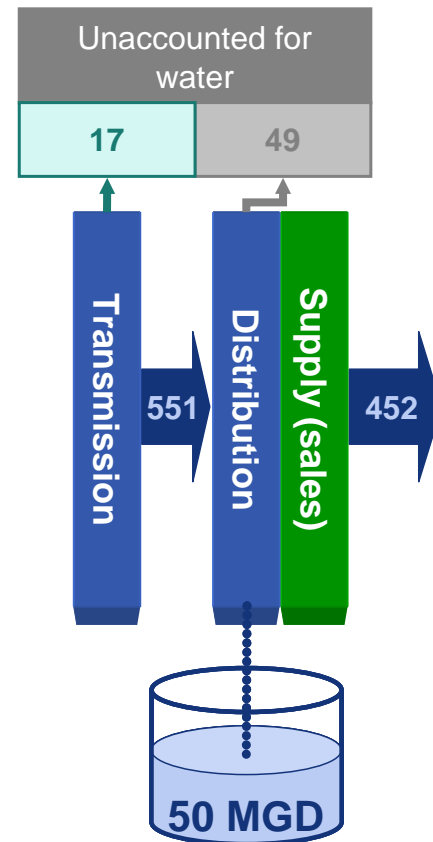
Irrigation department with some TSE assets, the remainder with Abu Dhabi Sewerage Services Company.



2. Current operations



- Losses well within established global norms - but
- ground/rain water has less value than desalinated water so important to conserve as much as possible
- DMZs have been established and much of the equipment is no more than 20 years old.



3. Water Wise



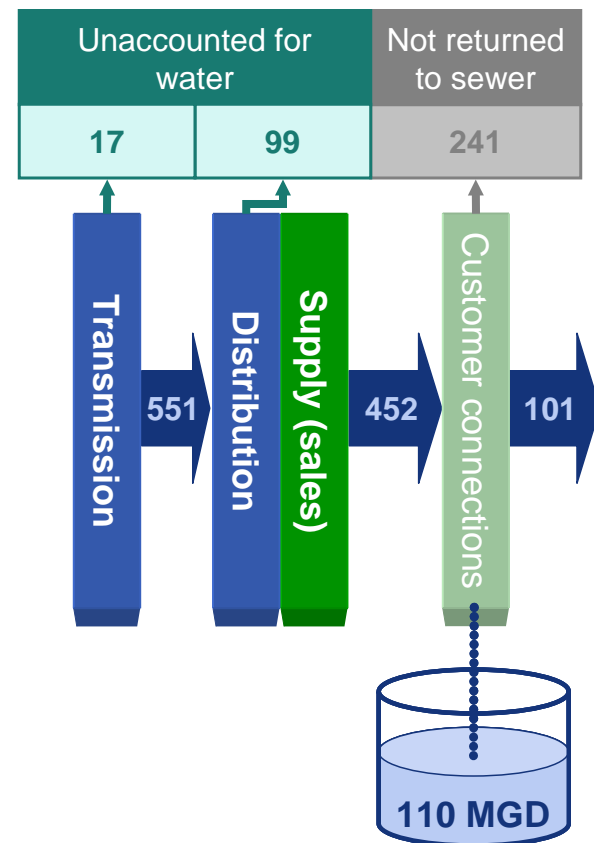
Promote efficiency, reduce waste

- tailor public awareness campaigns for offices, industry, schools and others
- save money by using water wisely
- mandate plumbing and fittings standards for premises
- promote water reuse strategies where appropriate

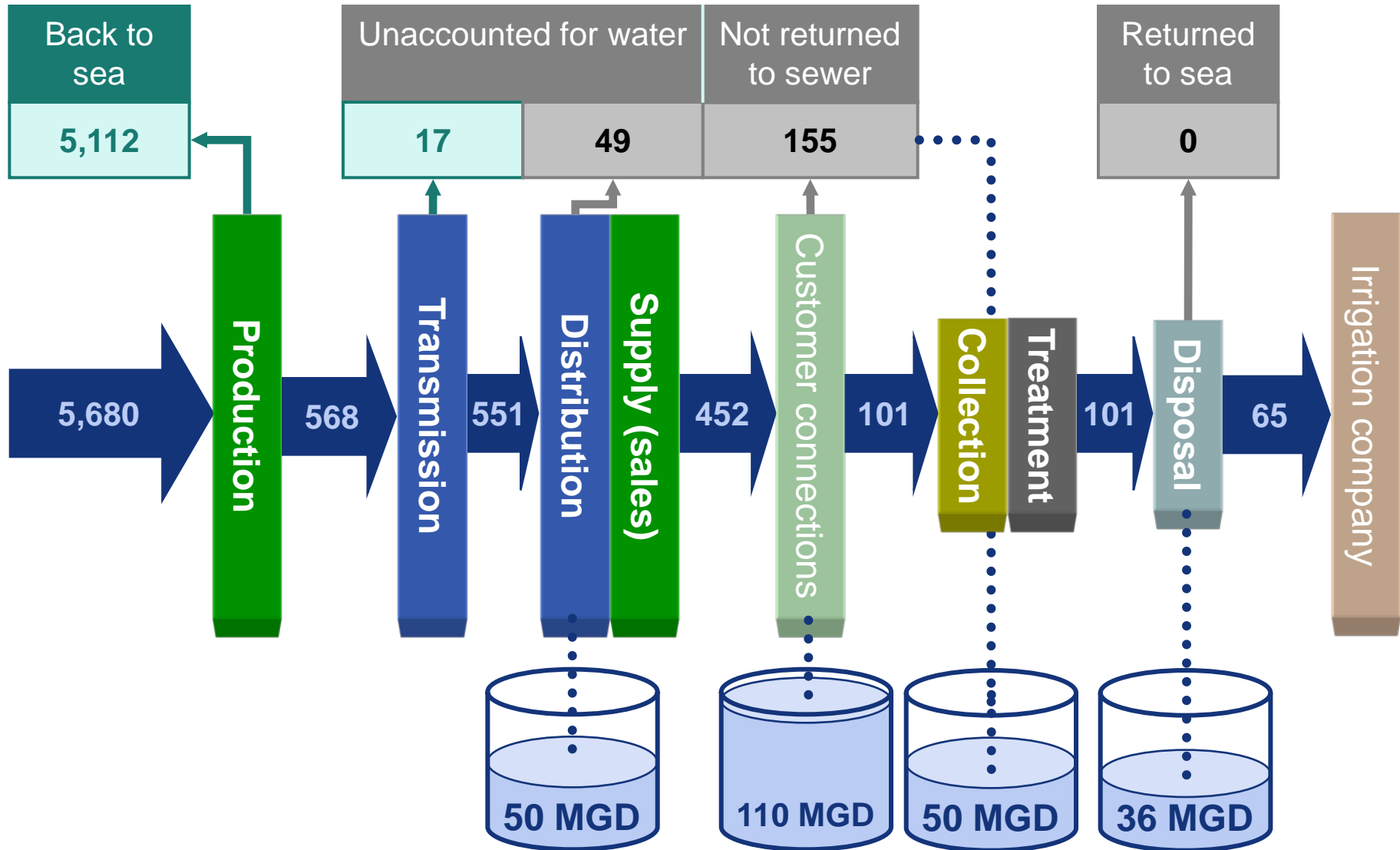
Target **high-level users**

- directly impact high-level users and discretionary use
- put more value on water

		Daily consumption per person	
		Litres	Gallons
Ex-pats	flats	160 - 220	32 - 44
	villas	270 - 730	54 - 146
Nationals	flats	165	33
	villas	460 - 1,760	92 - 532
	shabiyat	610 - 1,010	122 - 202



Overall released water

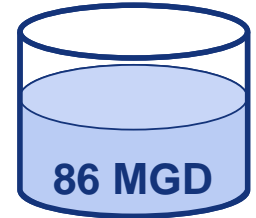


Sources of released water



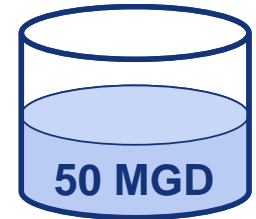
Strategy 1: take full control of the water cycle

- capture all RTS for TSE Irrigation Company
- new technical standards for irrigation



Strategy 2: Operator companies leakage improvements

- focus on the value of water
- adopt the Singapore model



Strategy 3: specialist Water Wise Office

- introduce Water Wise Office promotions
- mandate standards for plumbing and fittings



Release potential is:



Abu Dhabi v Singapore



	Singapore	Abu Dhabi	
		2007	Potential
Population	4.6 million	1.3 million	1.3 million
Connections	1.2 million	0.3 million	0.3 million
Demand	330 MGD	568 MGD	322 MGD
System losses	Under 5 %	Around 20%	Under 10%
Return to sewer	Over 90%	20%	50%
Metered connections	100%	70%	100%

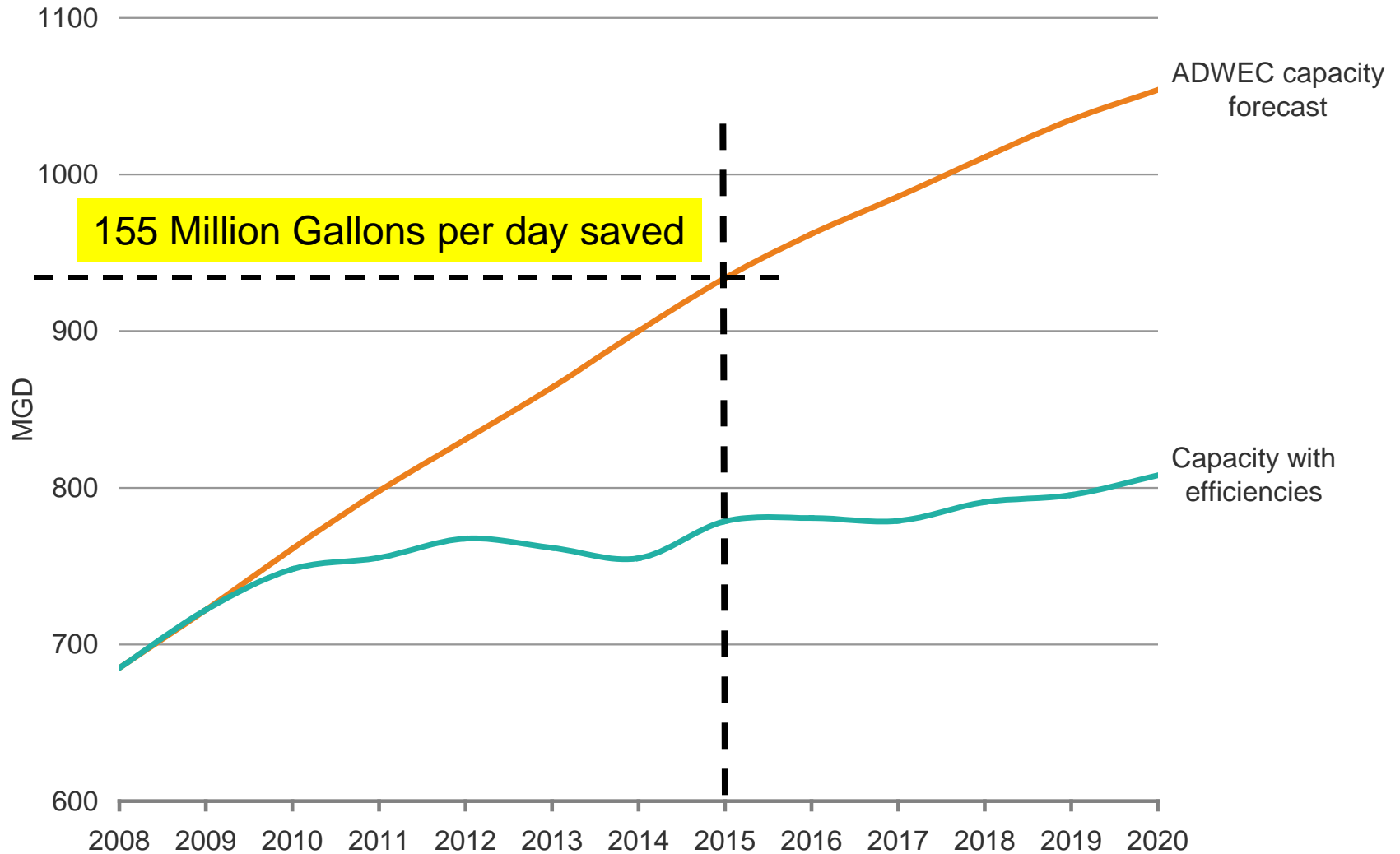
Gallons per person per day	72	437	247
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little irrigation

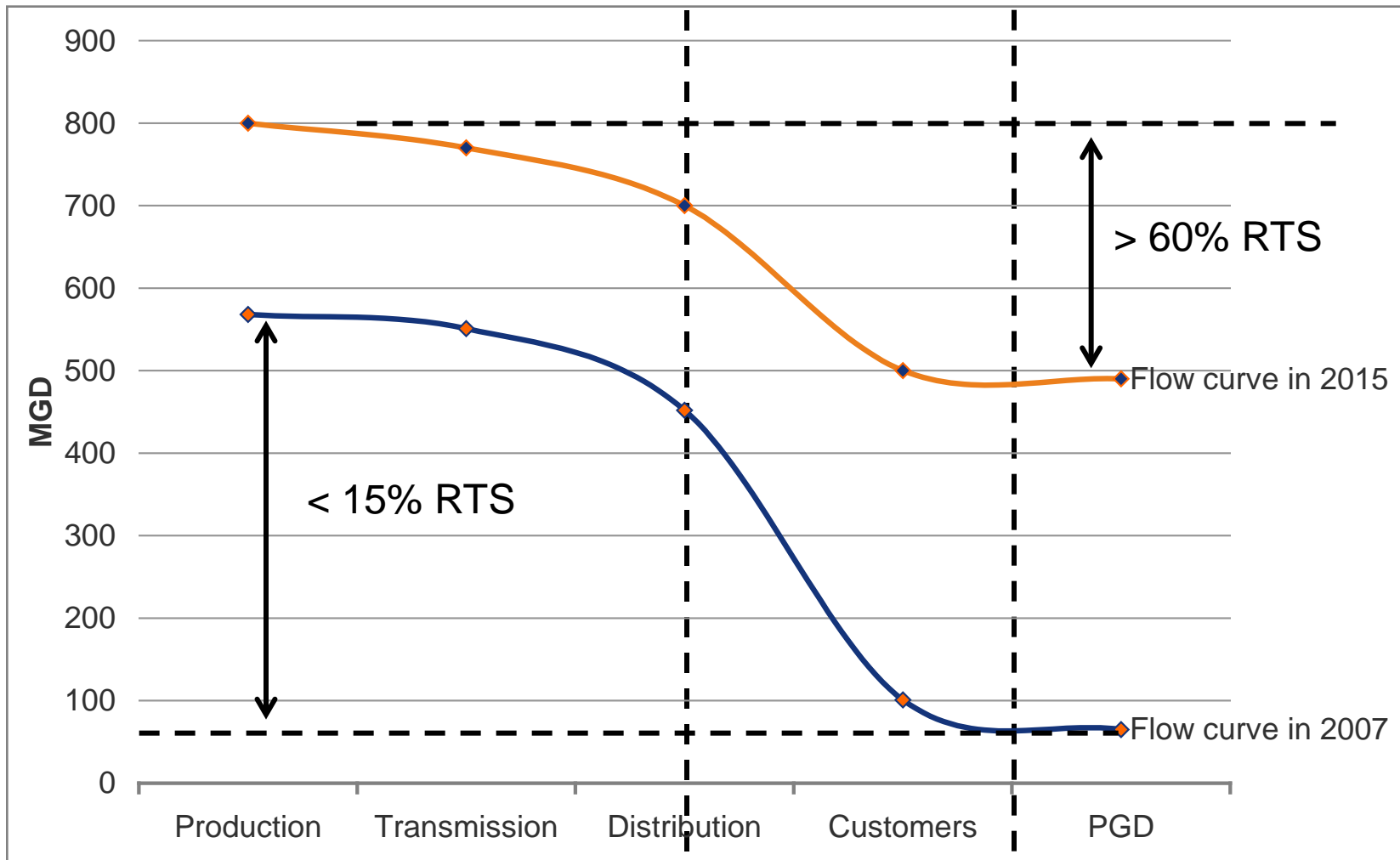
with irrigation

Without irrigation per capita use around 80 gallons per day in Abu Dhabi

Efficiency feeds growth



Daily flows in 2015



Much flatter curve – majority of potable water used by people not for irrigation

Shift from using potable water to TSE for irrigation

For irrigation, chilled storage, industrial, commercial use



1. Move to sustainable irrigation by using treated wastewater only
2. Reduce the ratio of produced to RTS over time
3. Adopt the Singapore model for managing water distribution networks
4. Develop Water Wise strategies
5. Promote conservation



Thank you for your attention