Example based on data by Roland Liemberger (2000) re-analysed by Allan Lambert (2017)

Comparisons between Utilities in 6 different countries

Rankings using % of System Input Volume

Country	Utility	Performance Indicator for Real (Physical) Losses				
		% of System Input Volume	m3/km mains/day wsp*	Litres/service connection/ day wsp*	Litres/conn/day /metre of pressure wsp*	Infrastructure Leakage Index ILI (incl. UARL)
Austria	Vienna	8,5%	10,3	334	8,3	6,0
Cyprus	Lemesos	12,5%	5,4	56	1,2	1,0
Tajikistan	Dushanbe	16,5%	278	4989	312	278
UK	Bristol	16,8%	8,6	123	2,6	1,9
Malta	Malta WSC (Gozo)	19,7%	6,8	72	1,6	1,6
USA	Philadelphia	25,8%	49,6	536	13,7	12,6
* when system pressurised						

Rankings based on KPIs other than % of System Input Volume

Rank	Performance Indicator for Real (Physical) Losses				
	% of System Input Volume	m3/km mains/day wsp*	Litres/service connection/ day wsp*	Litres/conn/day /metre of pressure wsp*	Infrastructure Leakage Index ILI (incl. UARL)
1	Vienna	Lemesos	Lemesos	Lemesos	Lemesos
2	Lemesos	Gozo	Gozo	Gozo	Gozo
3	Dushanbe	Bristol	Bristol	Bristol	Bristol
4	Bristol	Vienna	Vienna	Vienna	Vienna
5	Gozo	Philadelphia	Philadelphia	Philadelphia	Philadelphia
6	Philadelphia	Dushanbe	Dushanbe	Dushanbe	Dushanbe
* when system pressurised					

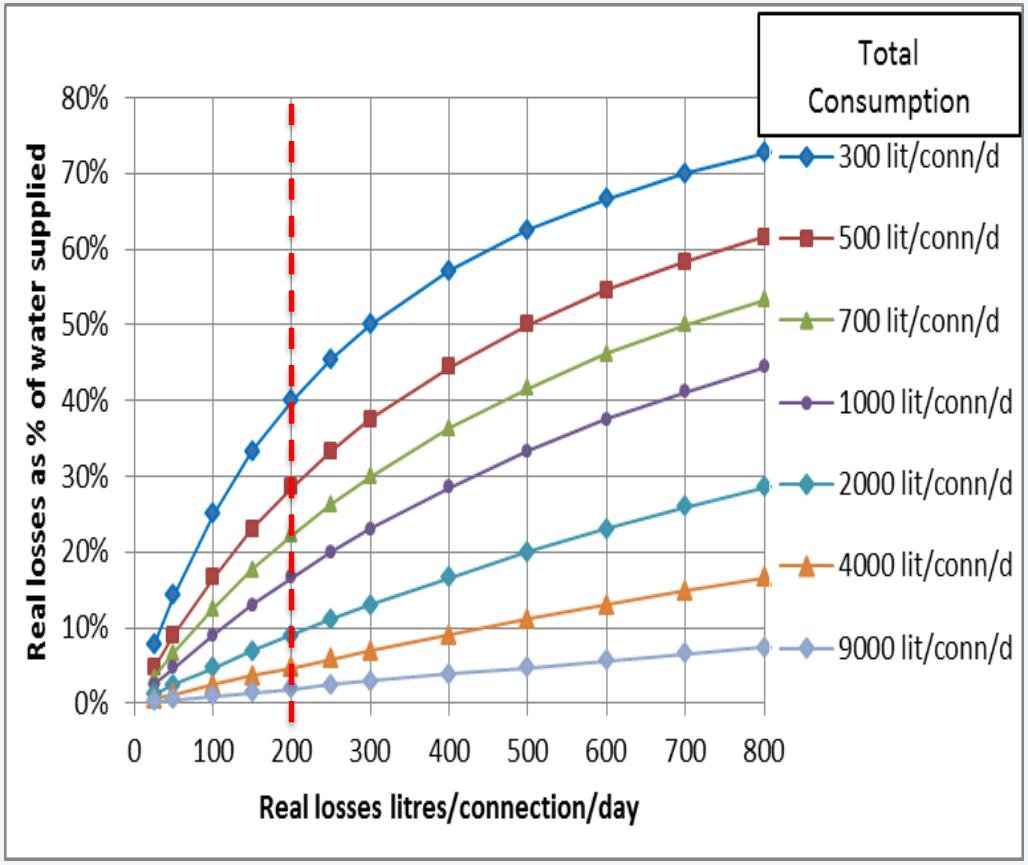
Which relevant parameters does each KPI take into account?

Does the Performance Indicator make allowance for:	Performance Indicator for Real (Physical) Losses				
	% of System Input Volume	m3/km mains/day wsp*	Litres/service connection/ day wsp*	Litres/conn/day /metre of pressure wsp*	Infrastructure Leakage Index ILI (incl. UARL)
% of time pressurised?	No	Yes	Yes	Yes	Yes
water exported?	No	Yes	Yes	Yes	Yes
length of mains?	No	Yes	No	No	Yes
number of connections?	No	No	Yes	Yes	Yes
average pressure?	No	No	No	Yes	Yes
connections/km mains ?	No	No	No	No	Yes
length of services ?	No	No	No	No	Yes
how low could you go?	No	No	No	No	Yes**
* when system pressurised		** Unavoidable Annual Real Losses UARL			

Conclusions

- % of System Input Volume just doesn't work:
  - does not make allowance for any system-specific key factors
  - gives misleading perspective of true performance
  - Strongly influenced by changes and differences in consumption per connection – variables which may vary substantially from one year to another, not under control of the undertaking
- The ILI is designed for technical performance comparisons between systems
- Volumetric PIs are good for setting targets and tracking progress
- Litres/connection/day/metre of pressure also allows for differences in pressure

This graph shows how strongly consumption influences Real Losses as a % of System Input Volume



200 litres/connection/day real losses would be:

- 2% of Water Supplied if consumption 9000 lit/conn/d (Singapore)
- 10% of Water Supplied if consumption is 2000 lit/conn/day (cities)
- 40% of Water Supplied if consumption is 300 lit/conn/day (rural areas)