flows and pressures at the pipe level

physical parameters of the commodities
materials of the network components
dimensions of the network components
(detailed) geometry of the network components
link between the buildings and the district heating network

for district heating planning & simulation

for smart grid planning & simulation

for waste / storm water planning & simulation

link between the buildings and the district heating network
link between the buildings and the network is important
buildings are sources of storm water (from the roofs) and waste water for computing fees for estimation of flows

are there LODs required for a specific use case?

are detailed utility network information required or are supply regions sufficient (or more appropriate)?
city entities provide the spatial context (e.g. pipe is in that road or within that wall)
city entities are consumers or producers of commodities (sources / sinks)

2D required
3D required

is a topographic representation of the utility network components required?
is a topological representation required?
what functional aspects are required?
time-variant attributes required?
connection to sensors / realtime data required?
cost parameters

what other standards are used in that context?

and if yes, which ones?

is coupling / integration of utility networks with the city entities

city entities are consumers or producers of commodities (sources / sinks)

city entities provide the spatial context (e.g. pipe is in that road or within that wall)

coupling / integration of utility networks with the city entities

general criteria