



Internal Contracting: the example of Stuttgart

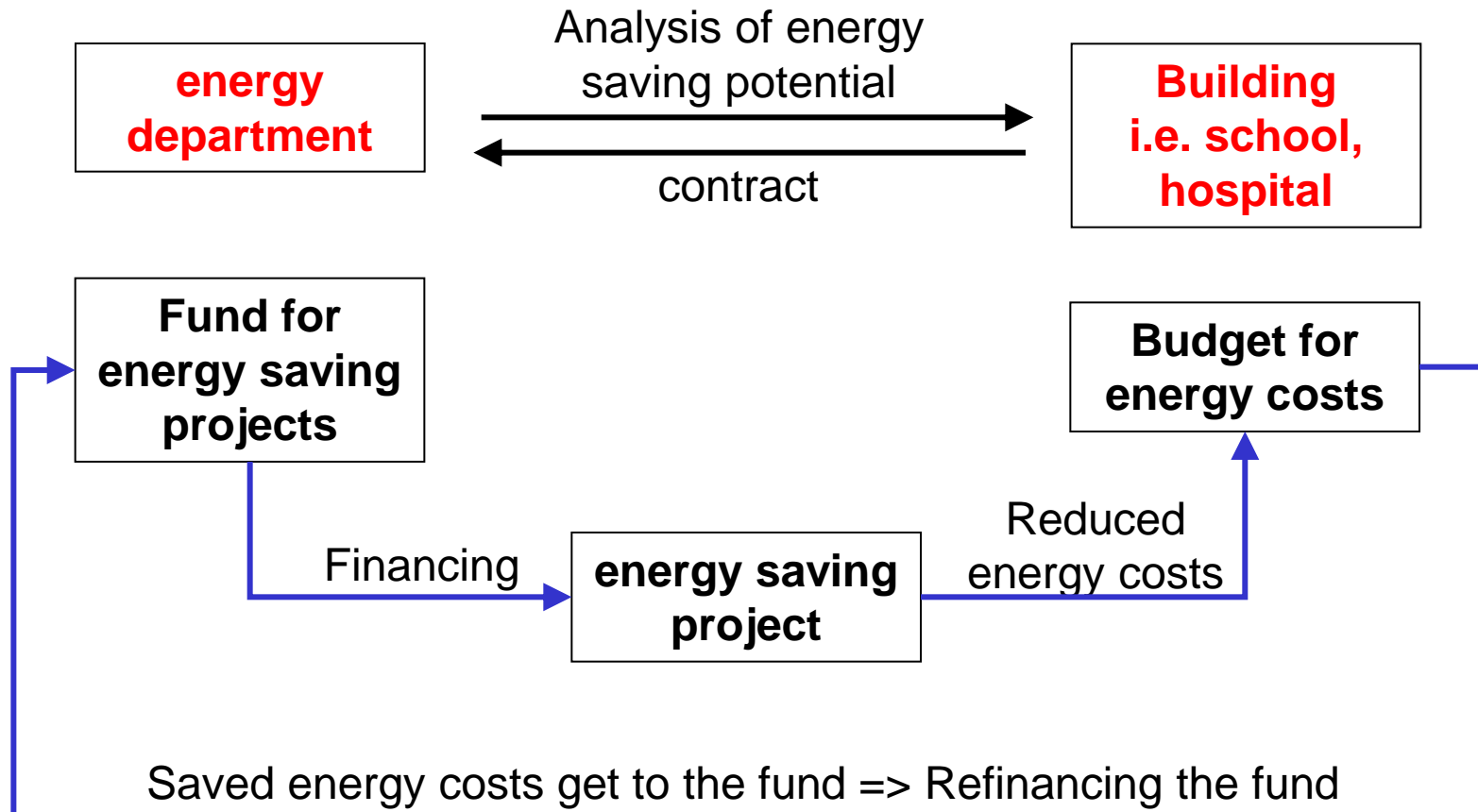
Nino Schäfer

City of Stuttgart

**Office for Environmental Protection,
Department for Energy Management
Gaisburgstraße 4, D 70182 Stuttgart
Phone +49/711/216-88645
email: nino.schaefer@stuttgart.de**



Principle of internal contracting





Measures financed by internal contracting

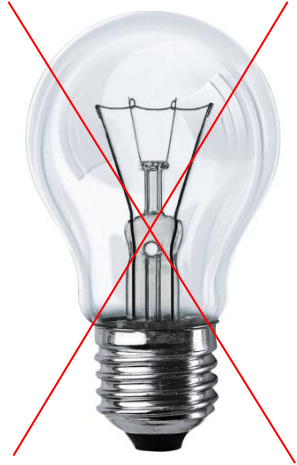
Examples:

- installation of thermostats
- new controls for heating, ventilation or lighting
- renewal of lighting
- insulation of walls or top floors
- investment in water saving (e.g. public fountains, reservoirs for gardens)
- heat recovery systems (e.g. in ventilations)
- street lighting (e.g. LED-lamps)
- combined heat and power plants
- renewable energy (e.g. wood chip firing, photovoltaic plants)



Illumination

incandescent bulb



halogen bulb



fluorescent bulb



LED-bulb



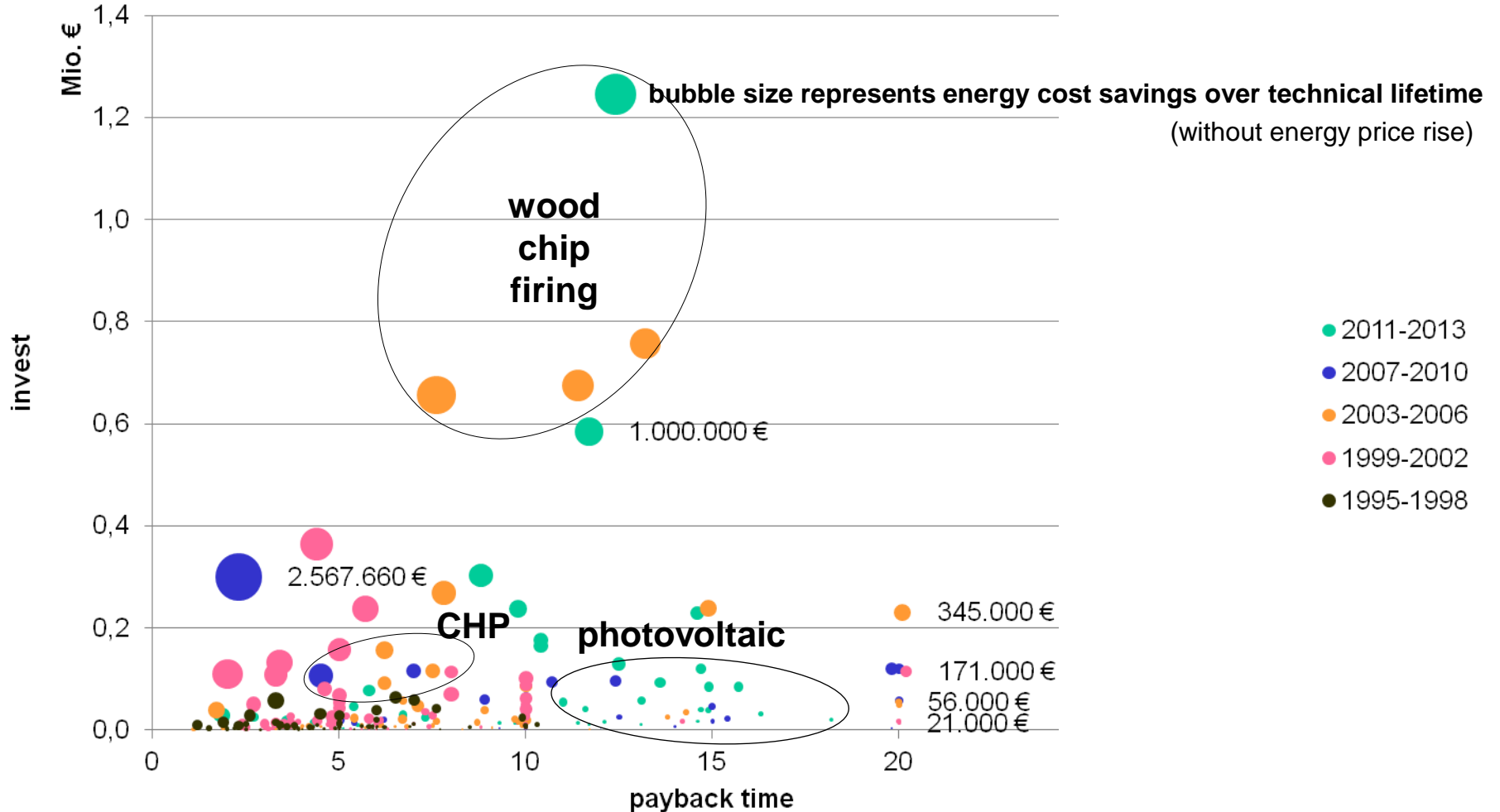
power	60 Watt	52 Watt	15 Watt	10 Watt
light flux	710 lm	840 lm	850 lm	810 lm
efficiency	11,8 lm/W	16,2 lm/W	56,7 lm/W	81 lm/W
technical lifetime	1.000 h	2.000 h	15.000 h	20.000 h
price per unit	0,8 €	2,4 €	10 €	20 €

costs over 20 years (use: 1.000 h/a, energy price: 28 Cent/kWh)

number	10 units	5 units	1,33 units	1 units
investment	16,00 €	24,00 €	13,33 €	20,00 €
energy cost	336,00 €	291,20 €	84,00 €	56,00 €
total costs	352,00 €	315,20 €	97,33 €	76,00 €



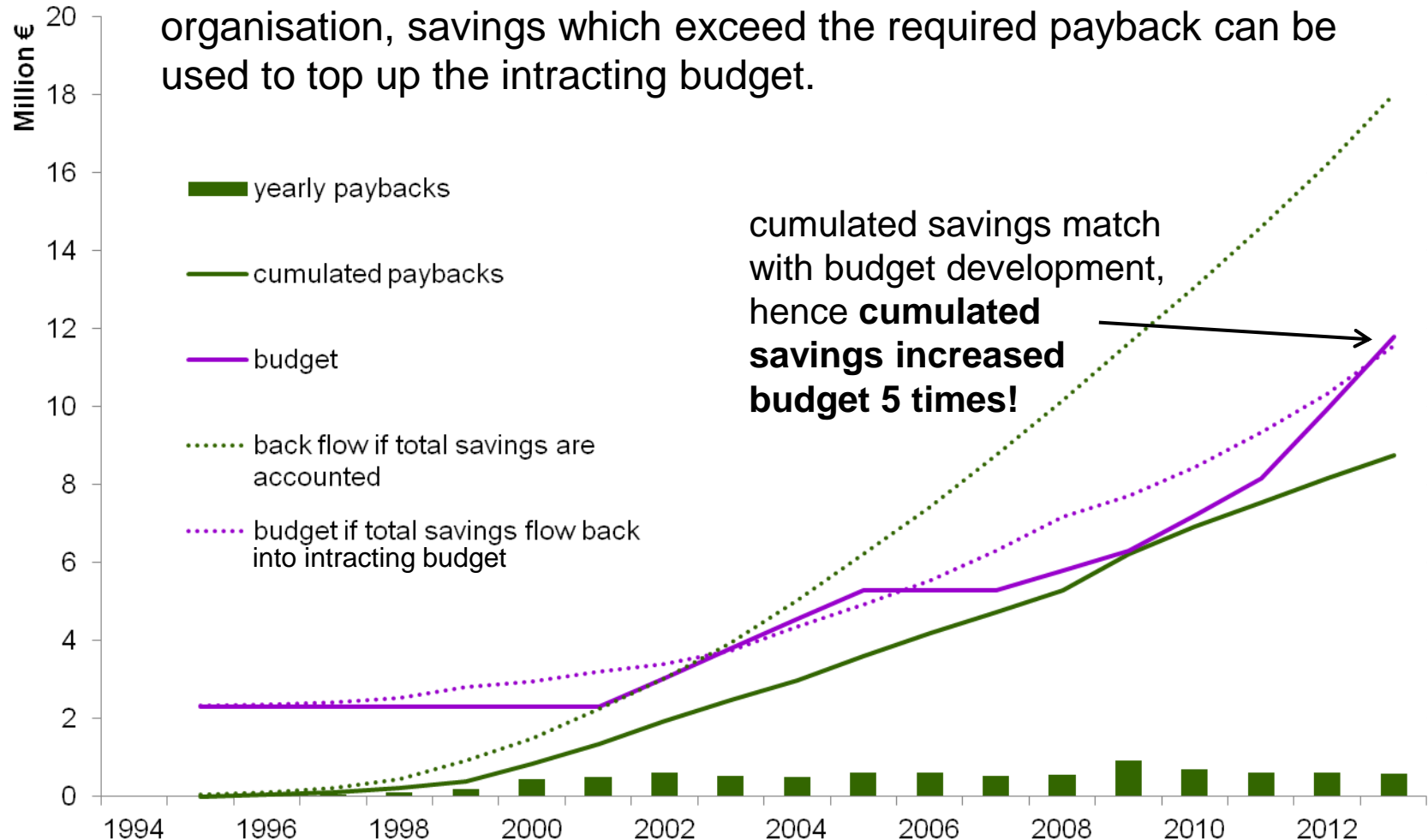
Implemented measures

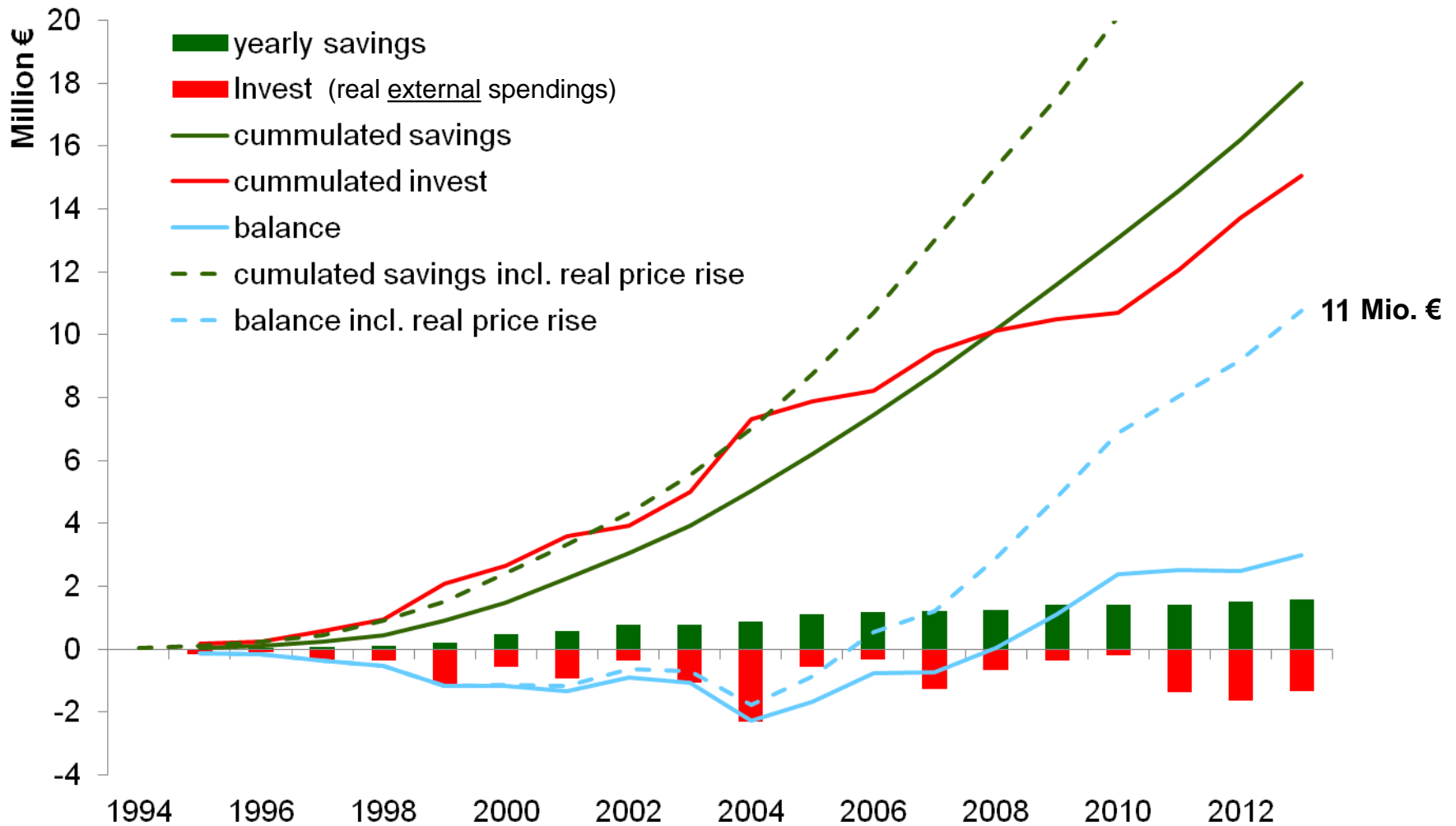




revolving fund – budget & paybacks

Since all savings remain within the overall budget of the same organisation, savings which exceed the required payback can be used to top up the intracting budget.







Stuttgart – Come and visit us.

