

# AutoPowerOff plug banks

- or "Standby killers"

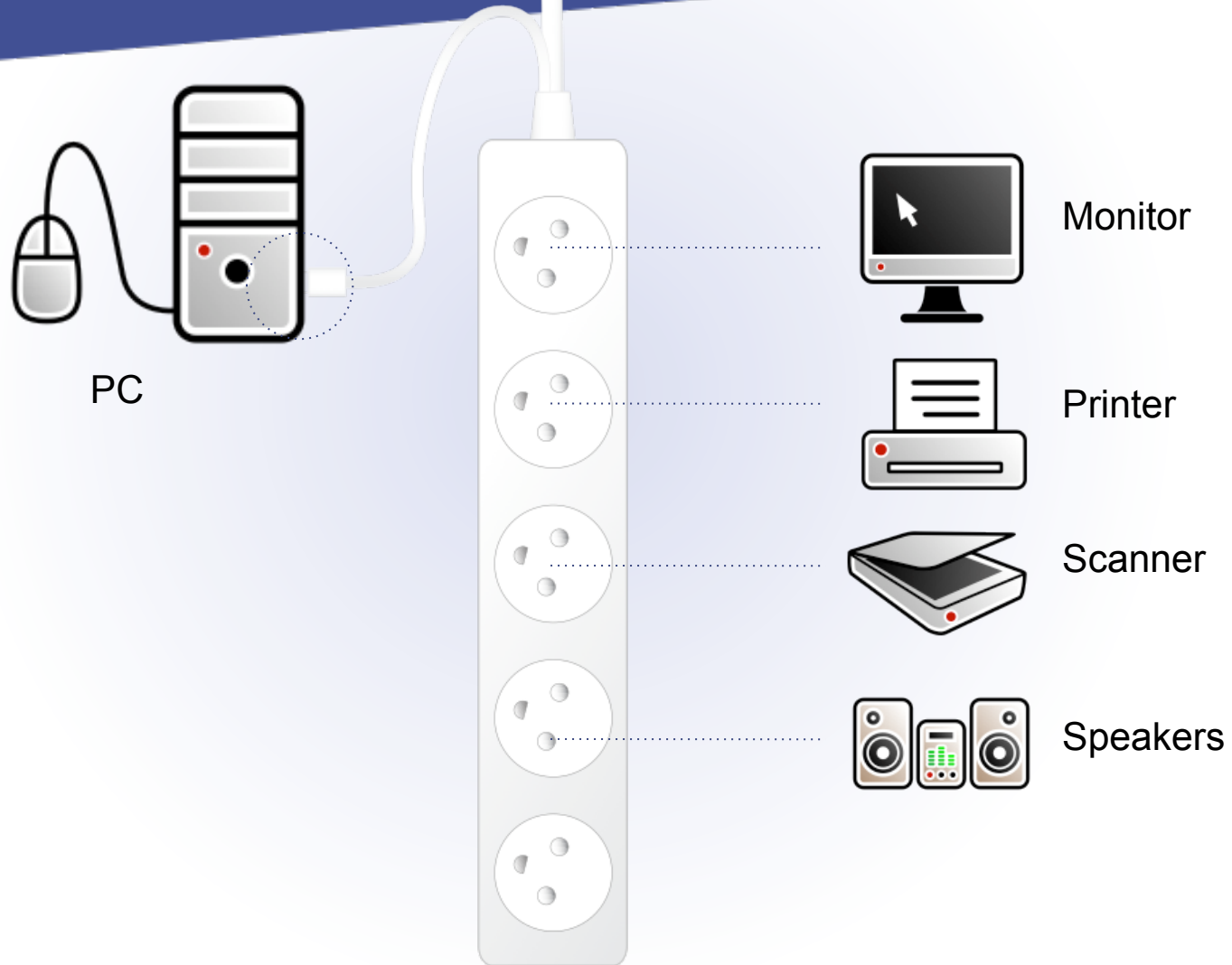


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# The background



# How it works for PC's



# The two types

Plug bank for PC



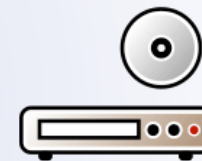
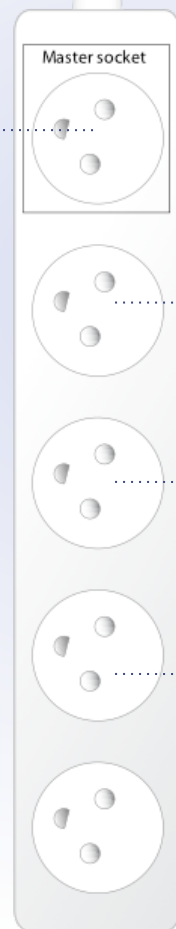
Plug bank for TV



# How it works for TV's

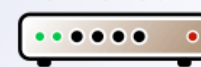


TV



DVD player

1011010  
0110100



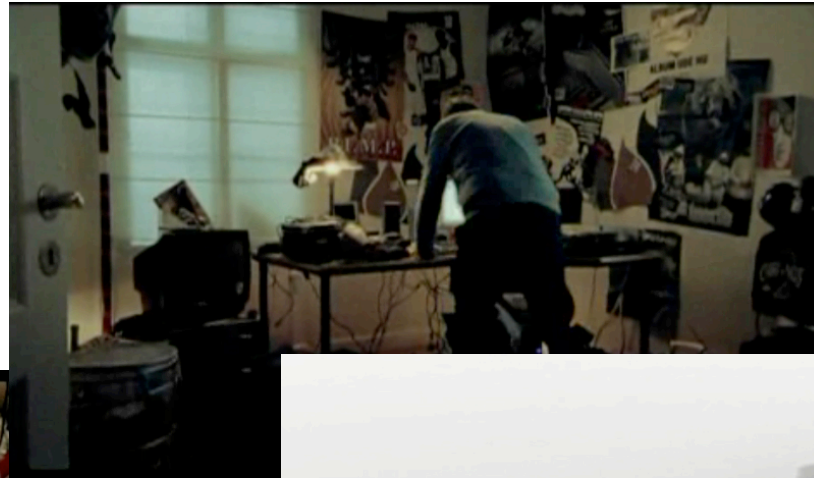
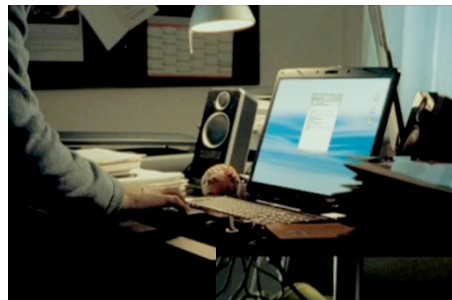
Digital Receiver



Game Console



# TV campaign



## Data and results - Potential targets...

<b>PC-related appliances –ownership in average in DK</b>	<b>2008</b>	<b>2006</b>	<b>2004</b>
<b>Inkjet printers</b>	<b>32</b>	<b>38</b>	<b>60</b>
<b>Laser printers</b>	<b>23</b>	<b>23</b>	<b>20</b>
<b>Combined printer/scanner/fax</b>	<b>6</b>	<b>6</b>	<b>-</b>
<b>Combined printer/copier</b>	<b>7</b>	<b>5</b>	<b>-</b>
<b>Combined printer/scanner/copier</b>	<b>52</b>	<b>35</b>	<b>-</b>
<b>Separate scanners</b>	<b>17</b>	<b>17</b>	<b>31</b>
<b>External, traditional modem</b>	<b>13</b>	<b>13</b>	<b>23</b>
<b>ISDN modem</b>	<b>17</b>	<b>15</b>	<b>19</b>
<b>ADSL-router/modem</b>	<b>61</b>	<b>48</b>	<b>28</b>
<b>Wireless network box (separate?)</b>	<b>61</b>	<b>34</b>	<b>9</b>
<b>PC-speakers (separate from monitor)</b>	<b>80</b>	<b>74</b>	<b>63</b>
<b>External CDROM/DVD player</b>	<b>13</b>	<b>7</b>	<b>12</b>
<b>External CDROM/DVD-burner</b>	<b>8</b>	<b>-</b>	<b>-</b>
<b>Firewall unit</b>	<b>28</b>	<b>25</b>	<b>18</b>
<b>External HDD/ZIP-drive</b>	<b>40</b>	<b>19</b>	<b>8</b>



## Data and results - Potential targets...

<b>TV-related appliances –ownership in average in DK</b>	<b>2008</b>	<b>2006</b>	<b>2004</b>
<b>DVD</b>	<b>134</b>	<b>98</b>	<b>69</b>
<b>VCR</b>	<b>74</b>	<b>113</b>	<b>108</b>
<b>Surround sound</b>	<b>44</b>	<b>29</b>	<b>20</b>
<b>Set-top box</b>	<b>23</b>	<b>8</b>	<b>3</b>
<b>Games machines</b>	<b>50</b>	<b>32</b>	<b>23</b>



# Data and results

## Claimed targets...

<b>PC-related appliances – what's in the plugs, in average</b>	<b>2008</b>
Printers	83
Speakers	67
Scanners	49
External HDD	32
Router/ADSL	31
Monitor	15
Other	4
<b>Total</b>	<b>281</b>

# Data and results

## Claimed targets...

<b>TV-related appliances – what's in the plugs, in average</b>	<b>2008</b>
DVD	70
VCR	46
Games machine	22
Set-top box	21
Surround sound	19
Other	36
Total	214

# Data and results

## When to kill...

<b>TV</b>	<b>Average size</b>	<b>ON hours per year</b>
CRT 1	26	1760
CRT 2	21	1050
LCD 1	34	2050
LCD 2	25	1460
Plasma 1	38	1745
Overall		~1750

<b>PC</b>	<b>ON hours per year</b>
PC 1	1700

# Data and results

## Without TV Standby Killers...

Situation without Standby Killer

TV Sockets	ON	Time	Stdby	Time	OFF-m.	Time	Cons	C incl.
	Watt	Hours/y	Watt	Hours/y	Watt	Hours/y	kWh/y	pen. kWh/ year
<b>Appliances</b>								
DVD	34	130	6	3748	6	1783	38	30
VCR	17	100	3	3748	3	1783	18	13
Surround sound	50	1750	5	3505	5	3505	123	38
Set-top box	12,1	1750	10	7010			91	19
Games machines	77	730	10	3748	2	4281	101	15
Other	25	1750	5	3261			60	2
							430	116

# Data and results

## With TV Standby Killers...

Situation including SK, controlled by TV, i.e. ON 1750 hours/year

TV Sockets  <b>Appliances</b>	ON	Time	Stdby	Time	OFF-m.	Time	Cons	C incl.	Avg pen.	Full pen.
	Watt	Hours/y	Watt	Hours/y	Watt	Hours/y	kWh/y	kWh/ye	<b>Diff.</b>	<b>Diff.</b>
									<b>kWh/year</b>	<b>kWh/year</b>
DVD	34	130	6		6	1620	14	11	<b>19</b>	<b>23</b>
VCR	17	100	3		3	1650	7	5	<b>8</b>	<b>12</b>
Surround sound	50	1750	5		5		88	27	<b>11</b>	<b>35</b>
Set-top box	12,1	1750	10				21	4	<b>14</b>	<b>70</b>
Games machines	77	730	10	1020	2	0	66	10	<b>5</b>	<b>34</b>
Other	25	1750	5	0			44	1	<b>0</b>	<b>16</b>
							240	59	<b>58</b>	<b>191</b>

# Data and results

## Without PC Standby Killers...

PC Sockets	Situation without Standby Killer							C incl. penetr.
	ON	Time	Stdby	Time	Off-m.	Time	Cons	
<b>Appliances</b>	Watt	Hours/y	Watt	Hours/y	Watt	Hours/y	kWh/y	kWh/year
Printer	81	180	4	5023	2	3557	42,0	37,1
Speakers	24	1700	5	4388	3	2672	69,9	59,3
Scanner	14	52	4	3215	3	2747	20,2	10,4
Router/hub/switch	21	1700	9	5142			83,5	35,9
External HDD	12	1700	8	4388	3	2672	62,2	17,4
Other	25	1700	3		3	4388	55,7	2,2
							333,5	162,3

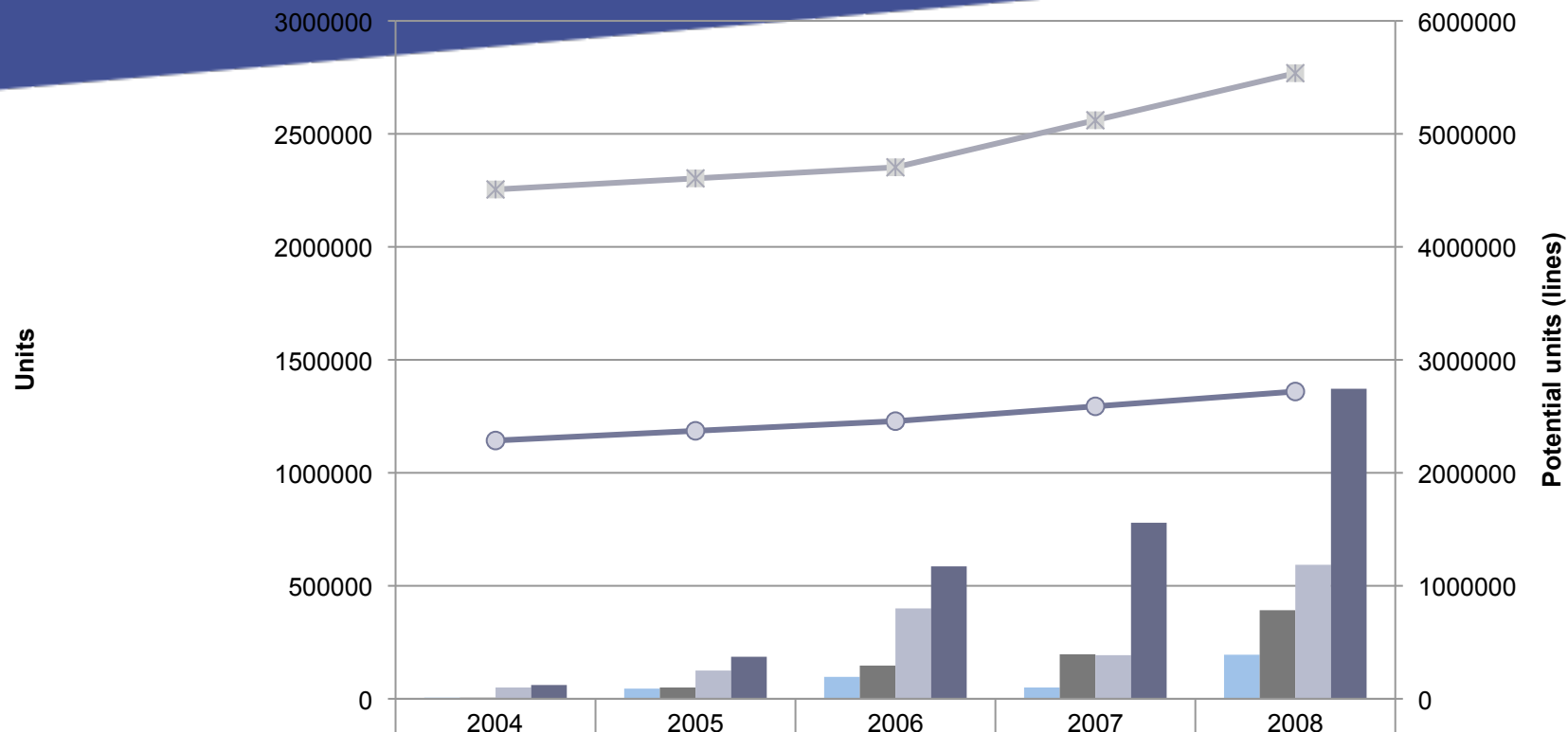
# Data and results

## With PC Standby killers...

PC Sockets	Situation including SK, i.e. ON 1700 hours/year								Avg pen.	Full pen.
	ON Watt	Time Hours/y	Stdby Watt	Time Hours/y	Off-m. Watt	Time Hours/y	Cons kWh/y	C incl. p kWh/ye	Diff. kWh/y	Diff. kWh/y
<b>Appliances</b>										
Printer	81	180	4	1520	2		21,3	18,8	18,3	20,8
Speakers	24	1700	5	0	3		40,8	34,6	24,7	29,1
Scanner	14	52	4	1648	3		6,5	3,3	7,0	13,7
Router/hub/switch	21	1700	9	0			35,7	15,4	20,6	47,8
External HDD	12	1700	8	0	3		20,4	5,7	11,7	41,8
Other	25	1700	3		3		42,5	1,7	0,5	13,2
							167,2	79,5	82,8	166,3

# Data and results

## Sales and Stock of Standby killers

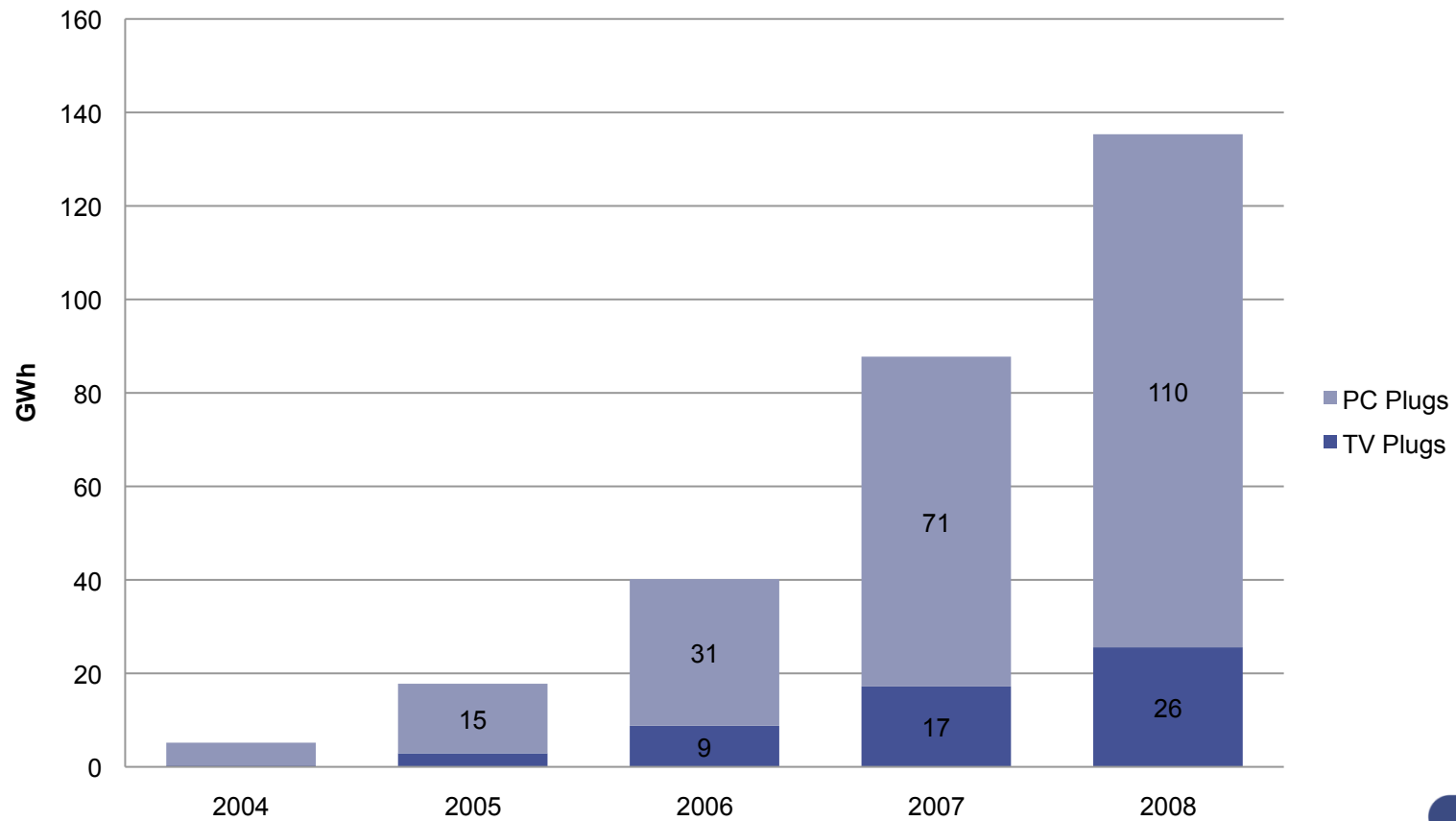


	2004	2005	2006	2007	2008
Est. sales, TV-plugs	5000	45000	97000	50000	195000
Stock (EB), TV-plugs	5000	50000	147000	197000	392000
Est. sales, PC-plugs	50000	125000	400000	193000	593000
Stock (EB), PC-plugs	61000	186000	586000	779000	1372000
Full TV-plug stock potential	4508000	4606000	4704000	5120500	5537000
Full PC-plug stock potential	2285850	2371600	2457350	2588425	2719500



# Data and results

## Estimated annual savings for Denmark



# Data and results

LoPoMo consumption		Plug impact	
Appliance Group	GWh	Savings 2008	Pct
PC-related	485	110	23
TV-related	315	25	8
White goods	190		
Halogen lamps	80		
Cordless phones etc.	70		
<b>SUM</b>	<b>1140</b>	<b>135</b>	<b>12</b>
<b>Total household consumption</b>	<b>~9700</b>		
<b>Pct</b>	<b>12</b>	<b>1,4</b>	

# Has the campaign worked?



Households with at least one  
AutoPowerOff plug bank for: PC: 45%  
TV: 11%

# Summary

- Around 45 % of households have at least one Standby Killer for PC usage
- Around 11% of households have at least one SK for TV usage
- Typically each SK used with PC controls 2,8 additional devices
- Typically each SK used with TV controls 2,1 additional devices
- Each SK for PCs saves on average 83 kWh/year
- Each SK for TVs saves on average 58 kWh/year
- All SKs with the current ownership levels and usage patterns already saves at least 135 GWh/year in Denmark.
- If all Danish homes used SKs for all TVs and PCs, around 575 GWh/year could be saved, corresponding to 6% of household electricity consumption and 2% of all Danish electricity consumption.



# Further information

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