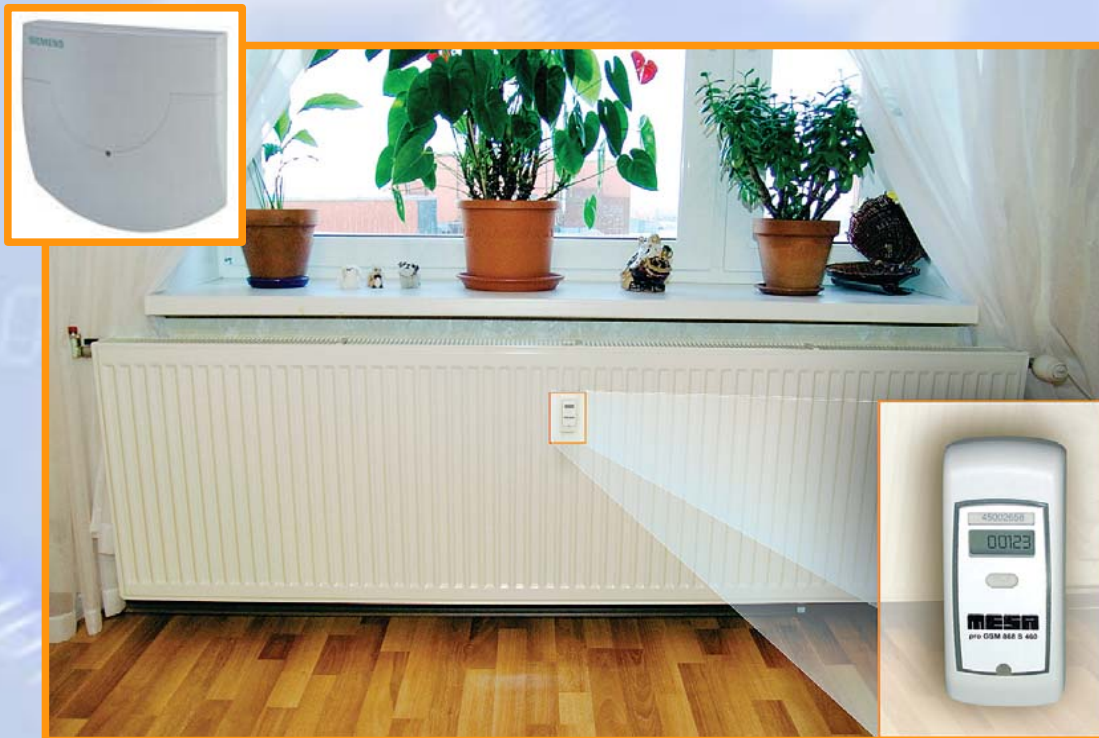


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# MESA Latvia

**think how to save?  
Use heat counting!**

**Individual  
counting  
system of heat  
energy  
consumption  
by using  
heating cost  
dividers**



---

# MESA Latvia

think how to save?

Use heat counting!

- Electricity costs– by **individual** consumption
- Water costs– by **individual** consumption
- Heating costs– by **COLLECTIVE** consumption

Heating makes to **85%** from public utilities payment total sum

**Why should we pay for neighbours???**

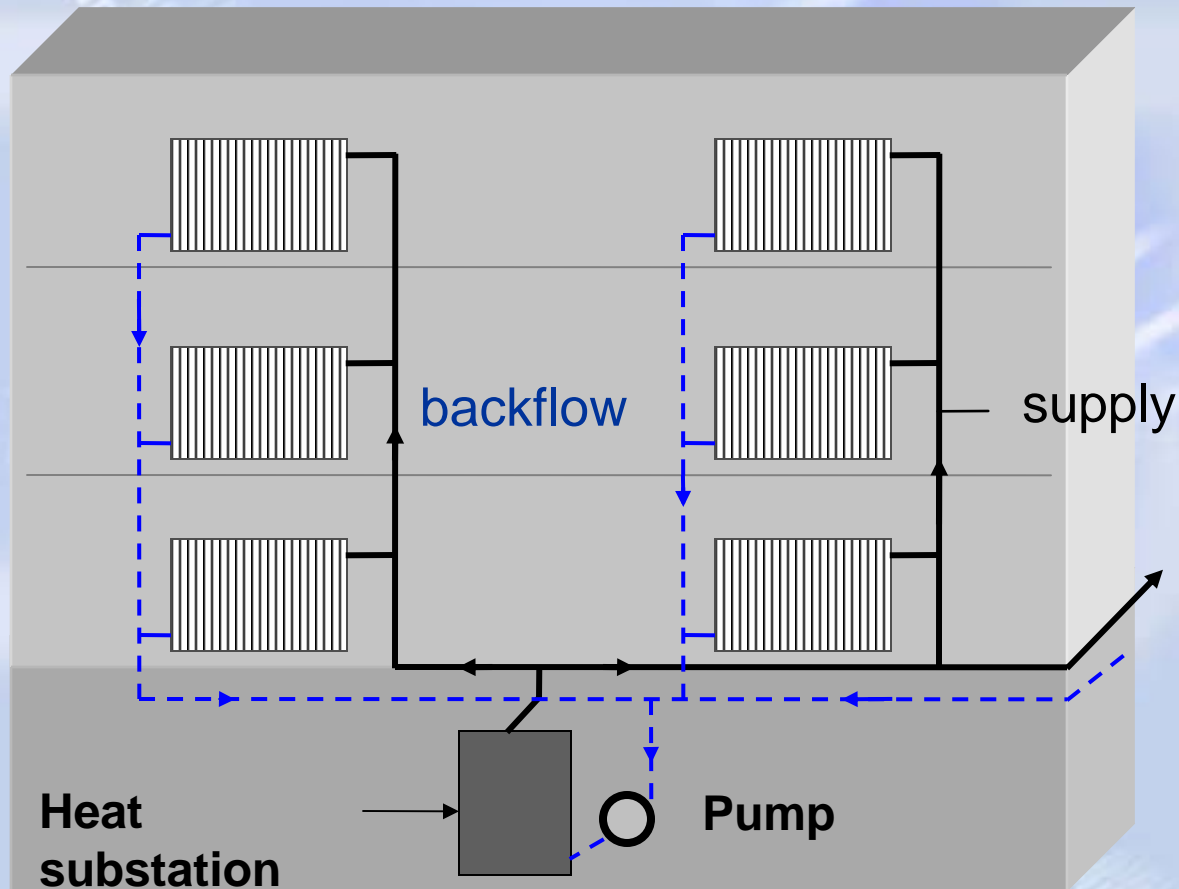
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# **Individual** counting of heat energy consumption in multi-storey houses

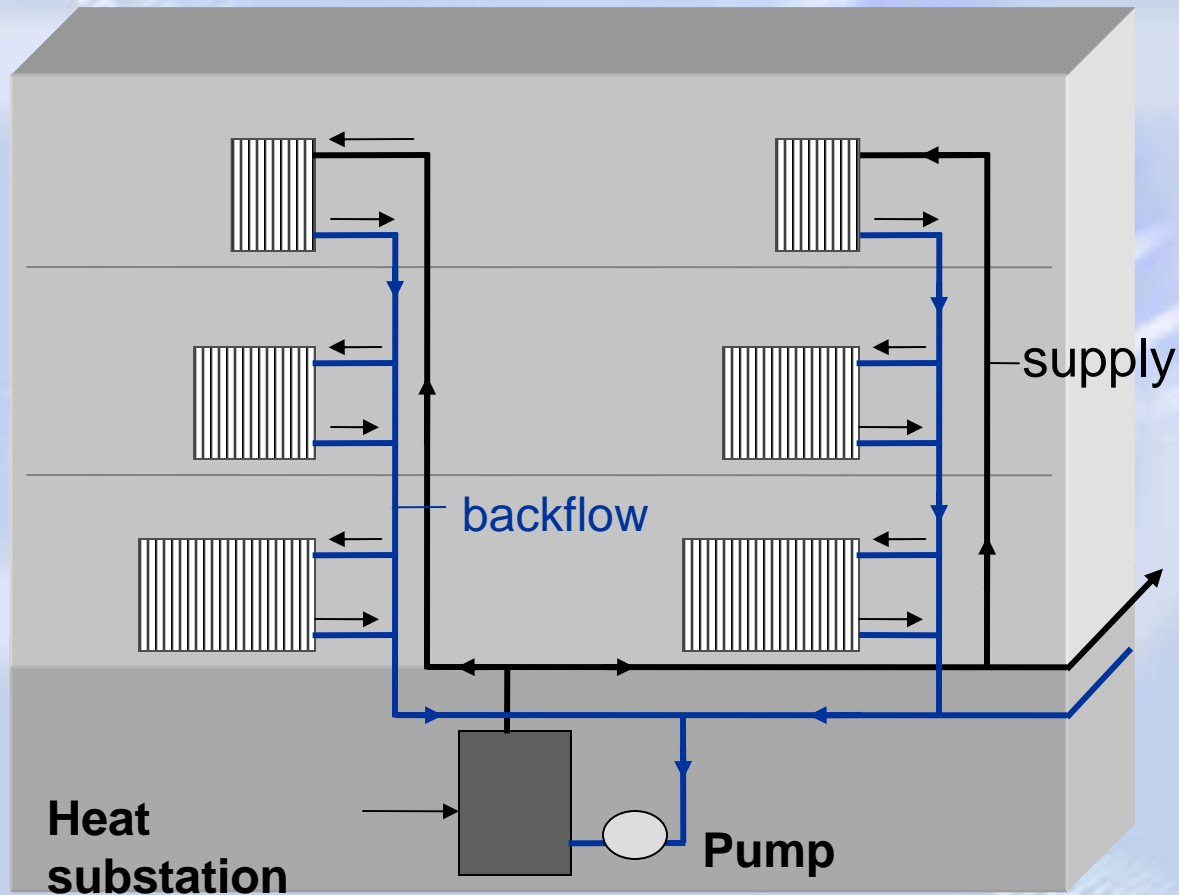
1. With individual heating counters
  - noose heating systems
2. With heating cost dividers
  - riser heating systems



# Two-pipe heating system



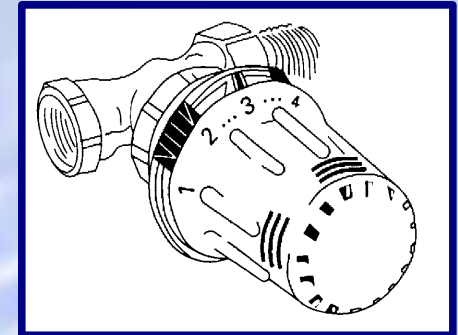
# One-pipe heating system

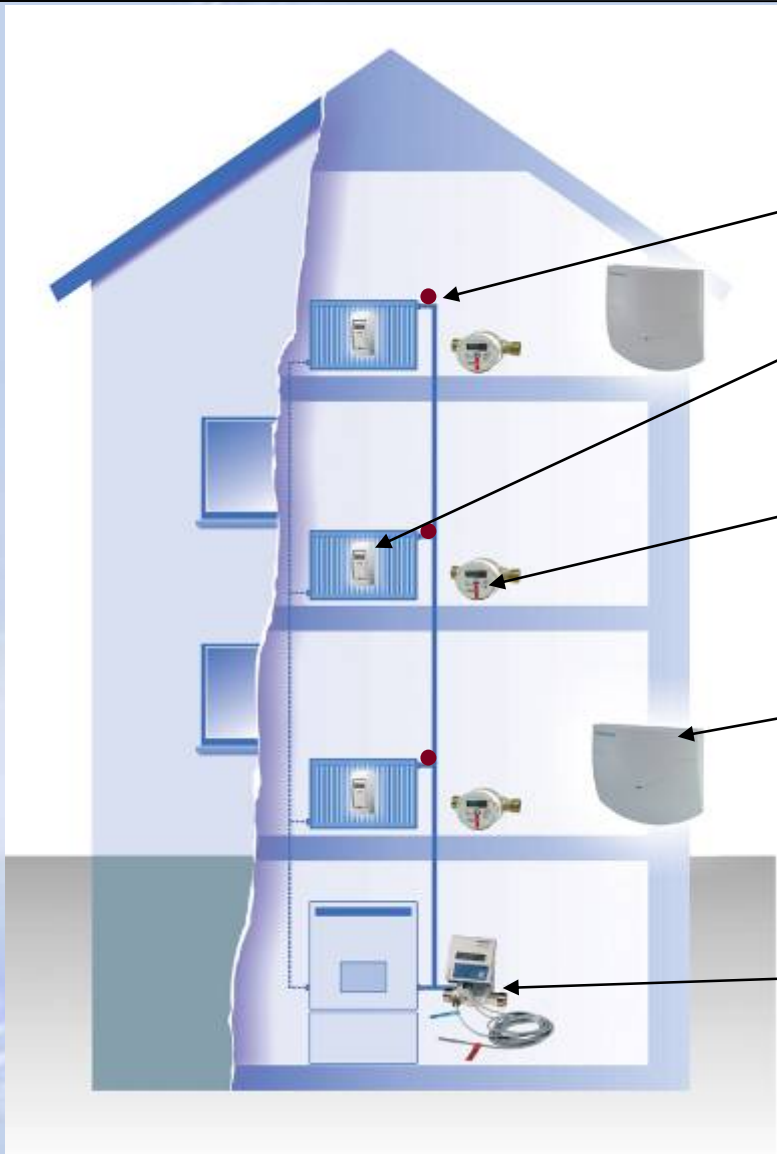


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## Heat counting implementation steps:

1. Equipping of radiators with thermostatic valves
2. Installation of heating cost dividers to all radiators in house
3. Calculation of heat output coefficient of radiators
4. **During the heating period- data reading monthly, processing, and distribution of decoding bill of individual consumption to each flat**





Thermostatic valves

Heating cost divider

Water counter with  
radio module

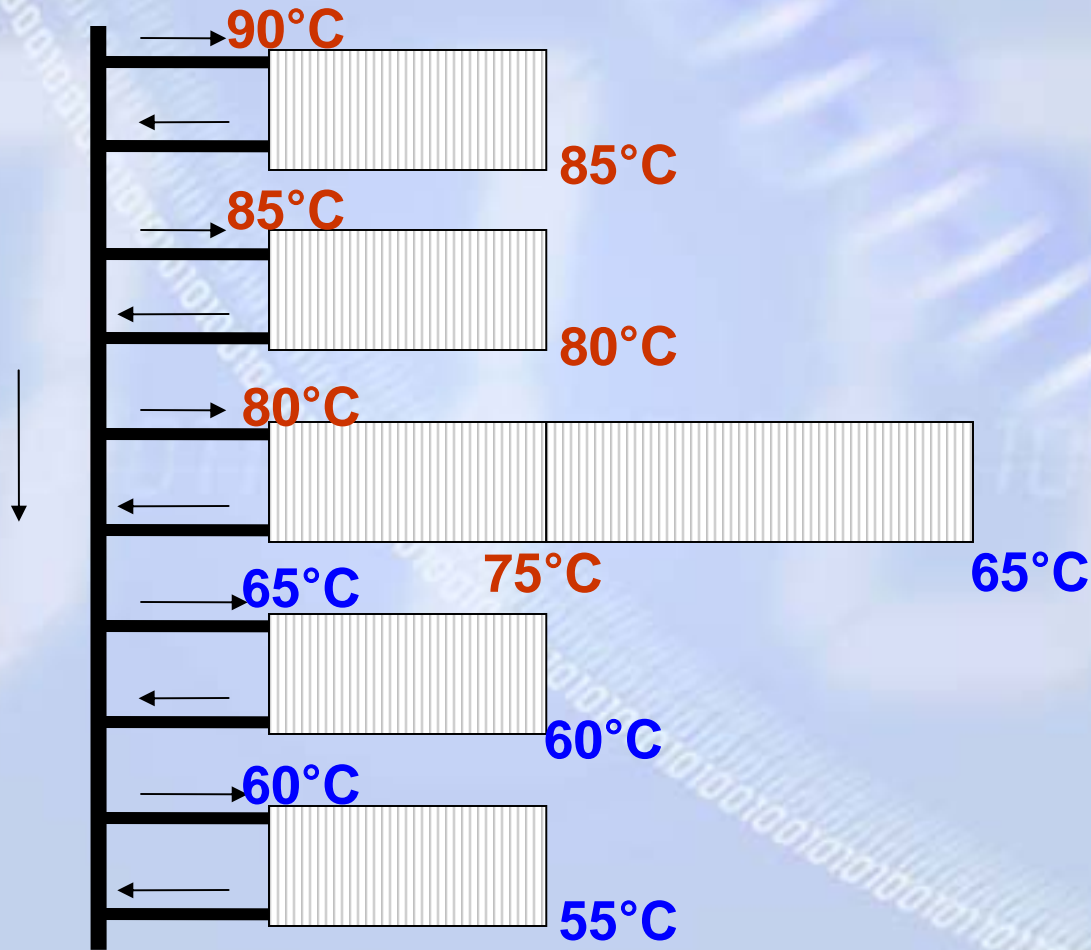
Data gatherer  
(allocator)

Total heat energy  
consumption  
counter of all  
house

# Kinds of radiators



# One-pipe heating system with inadequate capacity heater



# Methodology of calculations

Total consumption 100%

10 MWh = 410,55 LVL

**Constant  
consumption part  
30%**

123,16 LVL

**Distributable  
consumption part 70%**

287,39 LVL

Total area 455 m<sup>2</sup>

1 m<sup>2</sup> = 0,27 LVL

Total number of 1419

1 part = 0,20 LVL

1. flat	135 m <sup>2</sup> = 36,55 LVL	+	320 parts x 1,5 = 97,20 LVL	= 133,76 LVL
2. flat	90 m <sup>2</sup> = 24,37 LVL	+	330 parts x 1,1 = 73,51 LVL	= 97,88 LVL
3. flat	110 m <sup>2</sup> = 29,78 LVL	+	240 parts x 0,8 = 38,89 LVL	= 68,66 LVL
4. flat	120 m <sup>2</sup> = 32,49 LVL	+	320 parts x 1,2 = 77,77 LVL	= 109,56 LVL



### Komunālo maksājumu aprēķina pārskats

Namā pārvalde: NP "Parauģi"

Adrese iela Nr 123  
LV-1001 Rīga

Klienta numurs: 100010  
Ziņojuma numurs: 200.000.011

Lietotāja numurs: 0200  
Lietotājs: Uzvārds  
Objekts: Parauģu iela 12-3  
LV-1001 Rīga

Aprēķinu numurs: 123  
Aprēķina periods: 01.03.2008 līdz 31.03.2008  
Uzskaites laiks: 01.03.2008 līdz 31.03.2008

Uzvārds  
Parauģu iela 12 - 3  
LV-1001 Rīga

**EXAMPLE**

Eksploatacijas izmaksas	Datums	Daudzums	Aparēķins (p/mēn)	Papildus izmaksas
Centrālās apkures siltumenerģijas patēriņš			1.422,53 Ls	
Kurināmā izmaksu starpsumma			1.422,53 Ls **	
Past. apkures izmaksas			-248,99 Ls	
Sadalītās apkures maksa			1.175,54 Ls **	
<b>Maksa par apkuri</b>				<b>1.175,54 Ls</b>
<b>Kopā komunālie pakalpojumi</b>				<b>1.175,54 Ls</b>

Iedzīves aprēķins	Maksa kopā	Iedzīves aprēķins	Jānu dzīvokļi	Dienas kopā /	Jānu maksa
Maksa par apkuri	1.175,54 Ls	Periods: 01.03.2008 līdz 31.03.2008			
60% Pastāvīgā daļa	705,32 Ls	= 18.84.583 m <sup>2</sup> x 3,746875	=	711,504	= 27,80 Ls
40% Pastāvīgā daļa	470,22 Ls	= 2.061,636 Pastāvīgā daļa m <sup>2</sup> x 2,2808042	=	75,260	= 17,25 Ls
					<b>44,05 Ls</b>
					<b>Maksa kopā 44,05 Ls</b>

Mēraprēķinu rādītāju pārskats										
Veids	Aprēķins	Apvērsts m <sup>2</sup>	Veikals mēn.	Veikals mēn.	Aprēķinātā atbilstība	Sākuma atbilstība	Uzskaites iedaļas	Dienas kopā /	Veikals mēn.	Aprēķinātā
Viršma	MESAIel Kompakt	30503072	31.03.2008	375		01	24	x	0,75	57,512
Dzīvokļa telp	MESAIel Kompakt	30503086	31.03.2008	401		62	28	x	1,76	47,989
Gājvieta	MESAIel Kompakt	30503090	31.03.2008	0		0	0	x	1,14	0,000
Darbs telpa	MESAIel Kompakt	30503042	31.03.2008	86		30	38	x	0,99	37,304
Gājvieta	MESAIel Kompakt	30503075	31.03.2008	176		16	0	x	0,80	0,000
									<b>Iedzīves kopā</b>	<b>711,504</b>
Koridors	MESAIelm. durvstais		31.03.2008	27,800		27,200	0,600	dm	x	0,553
Tuvie	MESAIelm. durvstais		31.03.2008	34,700		34,200	0,500	dm	x	0,583
Koridors	MESAIelm. karstais ūdens		31.03.2008	36,980		36,200	0,780	dm	x	0,563
Tuvie	MESAIelm. karstais ūdens		31.03.2008	37,100		36,600	0,500	dm	x	0,583

Sia MESA Latvia " Dienvidu-15 " LV-1001, Rīga  
Tel: 7665035, 7348178 " Fakss: 7665034 " e-pasts: msa@msa.lv " Internet  
Datums: 21.04.2008  
Lapa: 1/1

# Bill of public utilities payment contains such information:

- Total heat energy consumption of house in Mwh and in LVL
- Heat energy consumption in each flat, LVL
- **Explanation in figures of individual heat consumption of all premises on the flat**
- Readout of water meter



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# **MESA Latvia**

**think how to save?**  
**Use heat counting!**



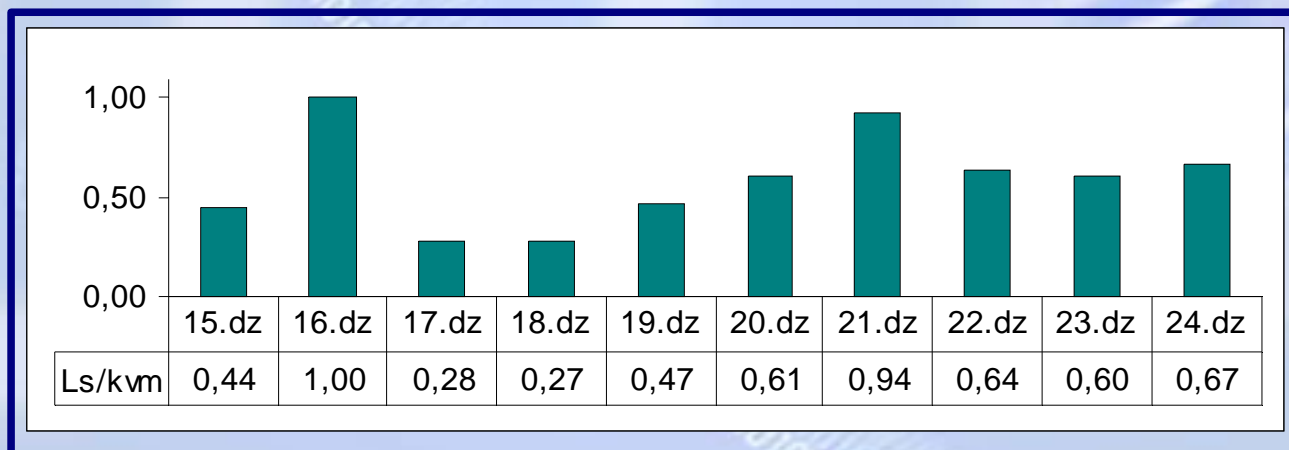
**Eizenšteina street 49, Riga**

- **602. serie**
- **9 floors**
- **Insulated frontal walls**
- **One-pipe heating system equipped with three-way thermo regulator valves**

# Heating cost changes after consumption on 1 square metre

Eizenšteina street 49, Riga

January, 2008

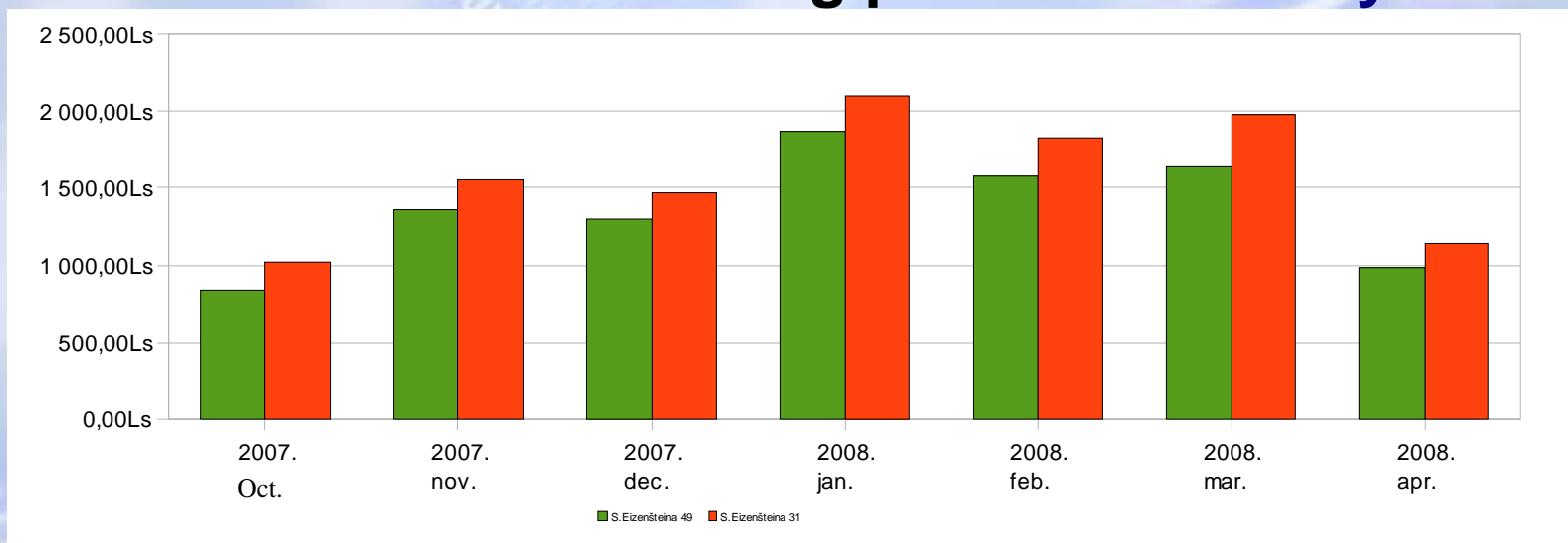


# Comparison of heating costs

Houses in Eizenšteina street 49 and 31 in Riga

Year 2007/2008 Heating period **economy 16%**

Year 2002/2003 Heating period **economy 25%**



# Comparison of heating cost economy

## Houses in Eizenšteina street 49 and 31 in Riga

2007/2008	Ls/kvm	Total by house, Ls	Economy Ls/kvm	Total economy by house, p.a. in Ls
Eizensteina 49	0,66	9561,67	0,11 Ls	1525,00
Eizensteina 13	0,77	11086,7		

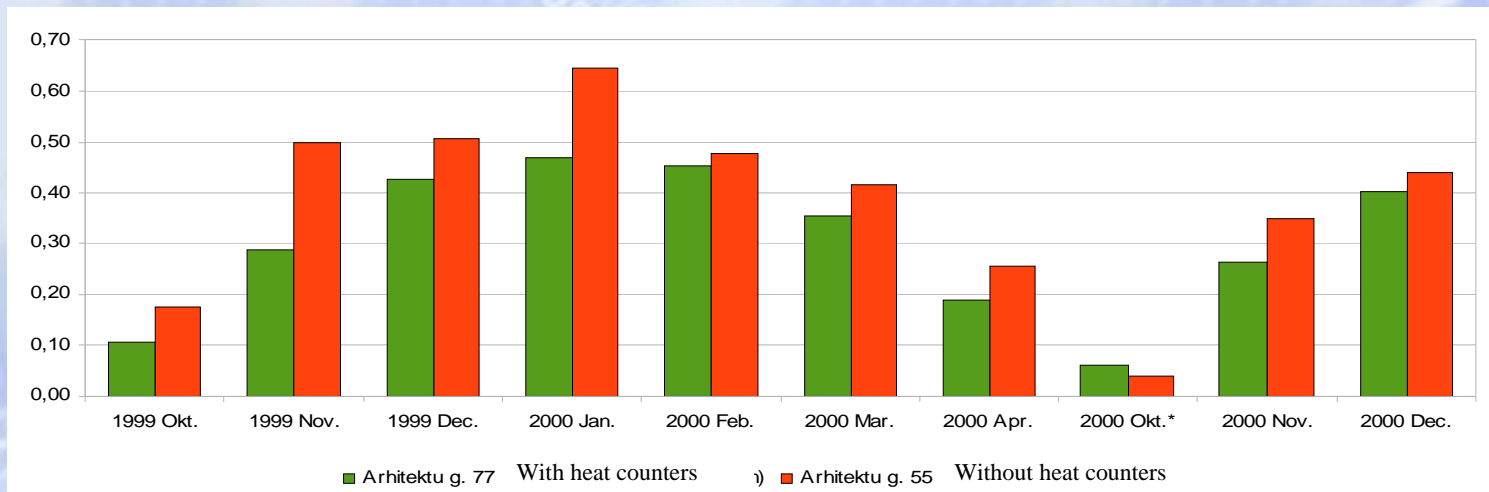
2008/2009 *prognosis	Ls/kvm	Total by house, in Ls	Economy, Ls/kvm	Total economy by house, p.a.Ls
Eizenšteina 49	0,92	13386,34	0,15 Ls*	2135,00 Ls*
Eizensteina 31	1,08	15521,38		

# Comparison of heating costs

**Vilnius, Arhitektu 77 (with individual counting) and  
Arhitektu 55 ( without individual counting)**

(renovated buildings, equipped with thermo regulators)

**economy 37 %**



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# **MESA Latvia**

**think how to save?**  
**Use heat counting!**

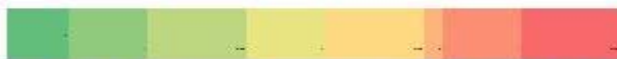


- Ozolciema street 46/3, Riga**
- **Renovation cofinanced by Berlin municipality**
  - **9 floors**
  - **Two-pipe heating system with thermo regulator valves**

# Heating cost changes on square meter by consumption in Ozolciema street 46/3 in Riga

Distribution proportion - 50% heat cost dividers; 50% area

st.	dz.	dz.	dz.	dz.	dz.	dz.	dz.	dz.	dz.
9	33	34	35	36	69	70	71	72	
8	29	30	31	32	65	66	67	68	
7	25	26	27	28	61	62	63	64	
6	21	22	23	24	57	58	59	60	
5	17	18	19	20	53	54	55	56	
4	13	14	15	16	49	50	51	52	
3	9	10	11	12	45	46	47	48	
2	5	6	7	8	41	42	43	44	
1	1	2	3	4	37	38	39	40	



Low consumption

High consumption

# Awareness raising of inhabitants on possibilities on energy saving



**Economy incurring from flow regulation of thermo regulators**

Indoor comfort temperature are from + 18° .....+23° C and in case if rooms are empty of people temperature can be decreased to +15°.....+16° C. Each separate temperature degree increases heating costs by 6%.



**Provide heat admittance into rooms**

Heat cost dividers counts all heat energy received from the heater but if it is covered by curtains, furniture or used like clothes dryer then heat is quite weakly spreading into room. In such cases heat consumption can increase to 40 %

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# Awareness raising of inhabitants on possibilities on energy saving



## Control ventilation

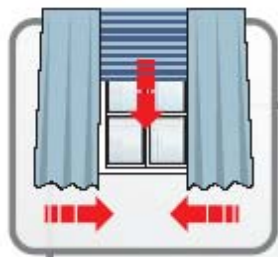
Uncontrolled ventilation usually occurs through gaps of windows and doors therefore windows and doors should be packed as much as possible. As outside air should be warmer than it more consumes money and energy



## Necessity to air rooms

It is recommended to air rooms once a day for few minutes if necessary. Unneffective is to leave open window for a longer time. Dont forget to close thermostat valves during room airing.

# Awareness raising of inhabitants on possibilities on energy saving



Decrease temperature during the night time

Indoor temperature decreasing slowly therefore it is important to decrease heat supply an hour before going to sleep. The curtains should not cover radiators.



Apply reasonable economy

Too low indoor temperature can cause wall, ceiling, floor and other construction condition negatively. **Repair of these constructions can be much more expensive than saved energy.**

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# What are the benefits?

## 1. Save heat energy and your money!

By optimizing indoor temperature, the total heat energy consumption of house decreases starting from **20-30%!**

## 2. Pay for real supply!

Heat supply to each heater are counted!

## 3. Pay for real consumption!

Make your comfort temperature in your flat by yourself!

## 4. Invest for economy!

Individual investments in flat insulation directly reflects on less payments for heating!

## 5. Consumption overview!

In heating period our clients receive printout of heat energy consumption for each heater in flat separately by each month!

---

# MESA Latvia

**think how to save?**  
**Use heat counting!**



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