



Ministry of Economic Affairs



# Increasing energy efficiency in the Netherlands by behavioural insights & RCT

Behavioural Insights Team  
(BIT EZ)

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# Outline

- Field research – pilot (dec 2014)
- RCT with energy coordinators (aug 2015)
- Preview: experimental setup CEO commitment (2016)





# Energy efficiency in the Netherlands

**Goal:** to increase efficiency > present 1.7 % per year

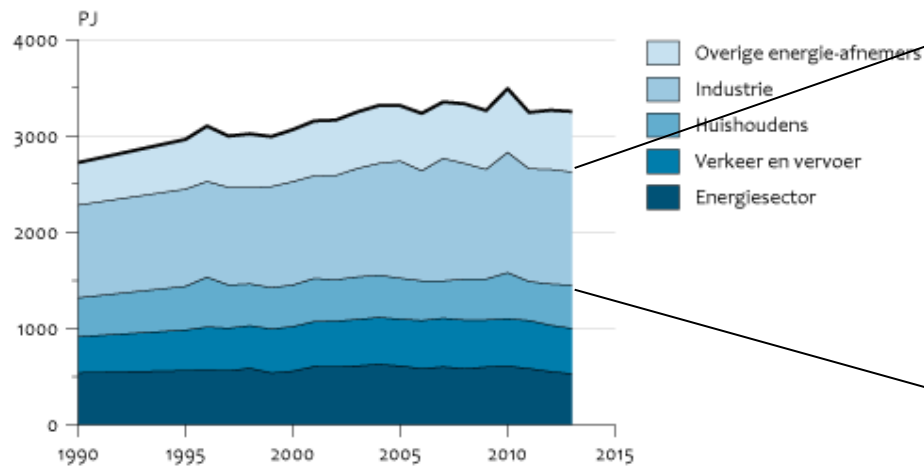
by *measurably* increasing the # of profitable energy measures in 2015/2016

## Project members:

- Economic Affairs / Dep Energy & Sustainability
- Behavioral Insights team Economic Affairs (**BIT EZ**)
- Netherlands Enterprise Agency (**RVO**)
- Netherlands Environmental Assessment Agency (**PBL**)
- Energy Research Centre of the Netherlands (**ECN**)
- Bureau Bovenkamers
- Wageningen University & Research Center (**WUR**)
- Universiteit Utrecht (**UU**)
- Universiteit van Tilburg (**UT**)

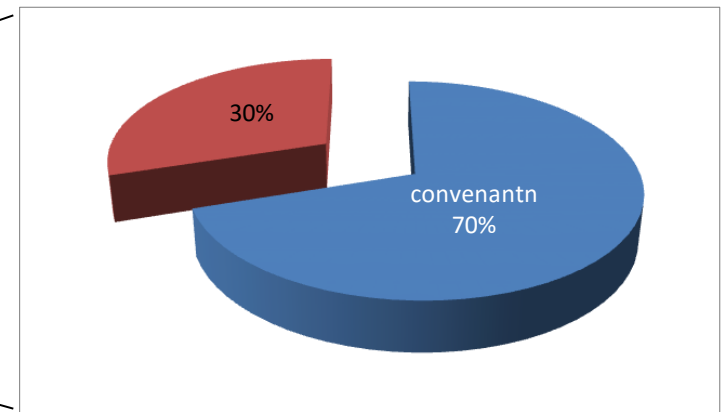


# Energy use in the Netherlands



Bron: CBS.

CBS/sep14  
[www.clo.nl/nl005219](http://www.clo.nl/nl005219)



Total: 800 PJ / year

-> Instrument: energy **convenants** between government and firms



## Field research





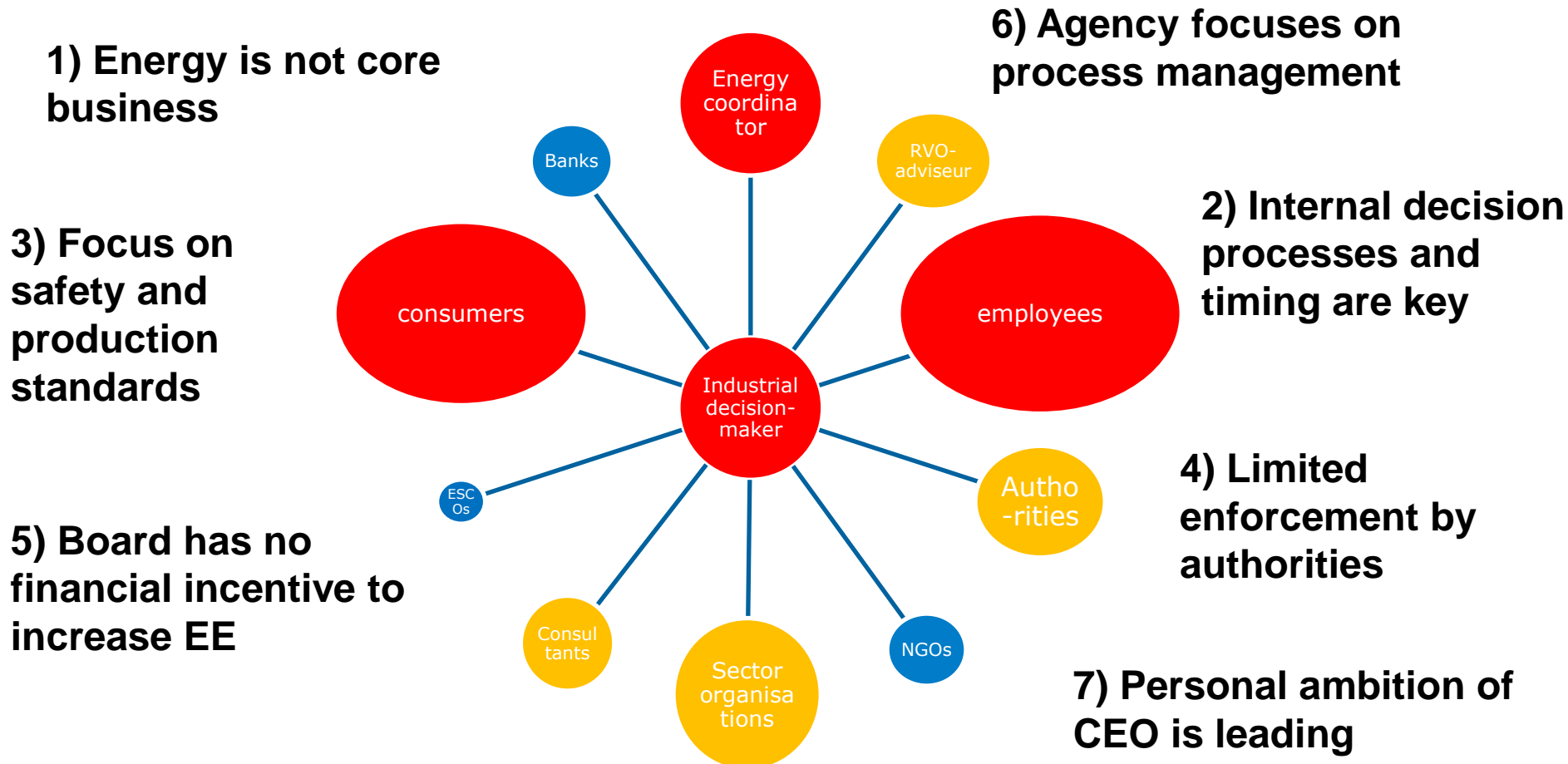
## Field research

- Heterogeneous: 33 sectors, 1100 firms; energy use 3 - 70% of costs >
- Level of knowledge and % energy savings vary between -2 and 30% per year

**Table 2**  
Sectors participating in LTA3.

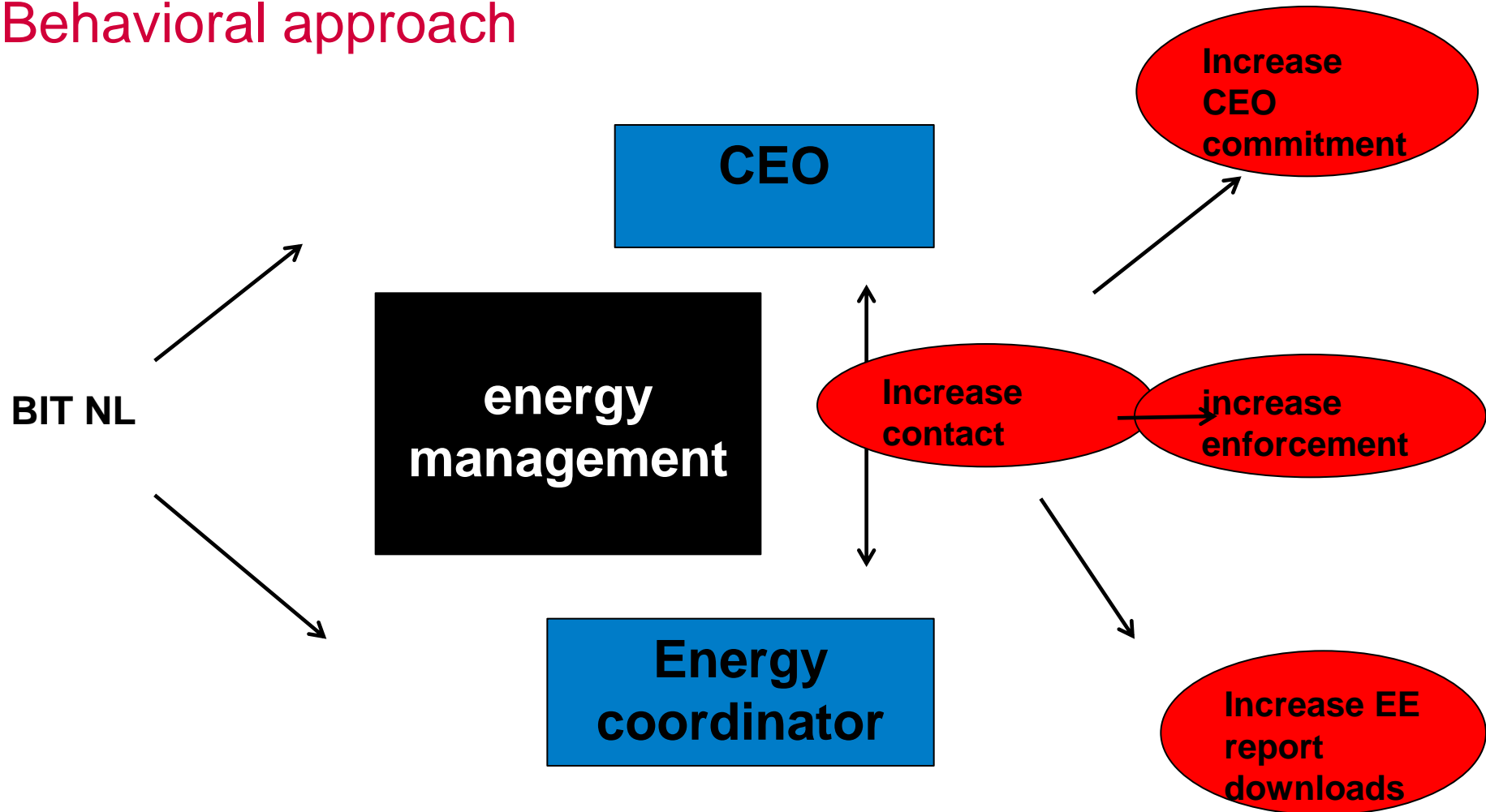
LTA3	Companies	Energy use	LTA3 (cont.)	Companies	Energy use
Sector (NACE code) <sup>iii</sup>	#	PJ	Sector	#	PJ
Asphalt industry (23.99)	41	3	Rubber and plastics industry (22)	98	9
Carpet industry (13.93)	13	1	Potato processing industry (10.31)	15	8
Chemical industry (20-21)	63	40	Rail sector (49.1-49.2)	2	14
Coarse ceramics industry (23.3+8.12)	40	8	Non-branch related industry (various)	39	14
Cocoa industry (10.82)	6	2	Oil and gas-producing industry (06)	10	43
Coffee roasting industry (10.83)	10	1	Refrigeration and cold storage industry (52.10)	85	3
Dairy industry (10.51)	49	18	Sand limestone and cellular concrete industry (23.5+8.12)	10	1
Financial service providers (64-65)	10	3	Soft drinks, waters and juices (11.07)	9	1
Fine ceramics industry (23.31)	7	1	Surface treatment industry (25.61)	61	2
Flour manufacturers (10.61)	6	1	Vegetable and fruit processing industry (10.3)	20	3
Foundries (24.5)	16	3	Tank storage companies (52.10)	16	2
Higher vocational education (85.4)	35	2	Textile industry (13)	24	1
ICT sector (63.1)	38	16	Textile service industry (96.01)	56	2
Margarine, fats and oil industry (10.4)	17	8	Universities (85.42)	14	6
Meat processing industry (10.1)	54	4	University medical centres (86.1)	9	5
Metallurgical industry (25)	19	4	Waste water treatment district boards (37.0)	25	8
			<b>Total LTA3</b>	<b>917</b>	<b>237</b>

## Field research: results





## Behavioral approach







## Intervention: add social norm



X 92



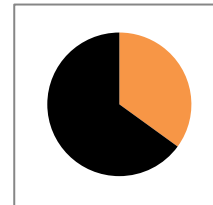
X 91

Uit de monitoring  
van 2013 blijkt dat  
ruim 80% van de  
onderzochte  
bedrijven het EEP  
volgens afspraak  
heeft uitgevoerd.

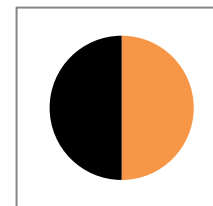
More than 80% of the  
companies have  
executed their EEP  
according to plan



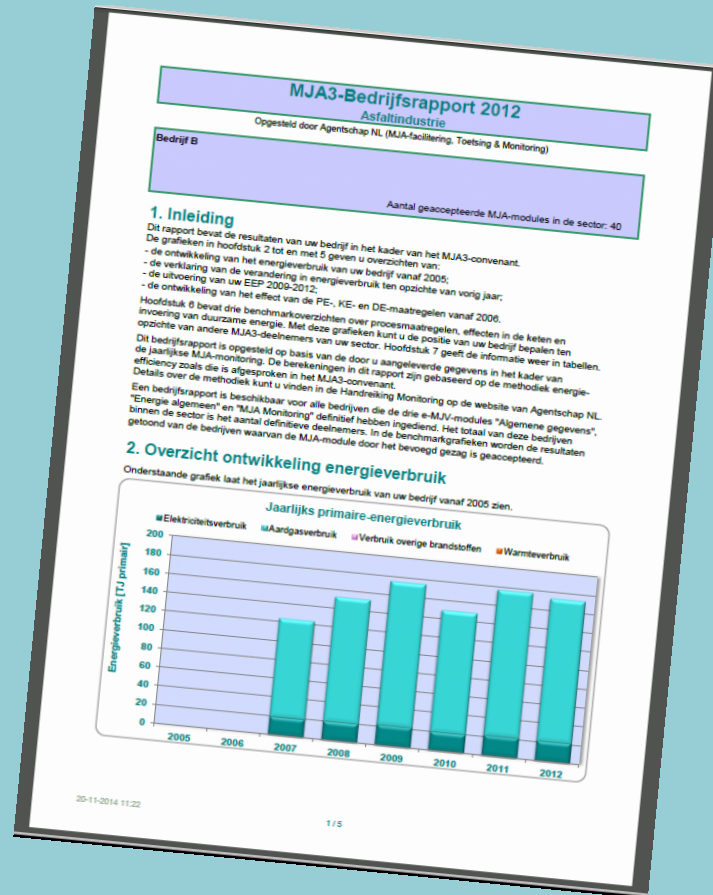
## “Did you contact your manager about the letter?”

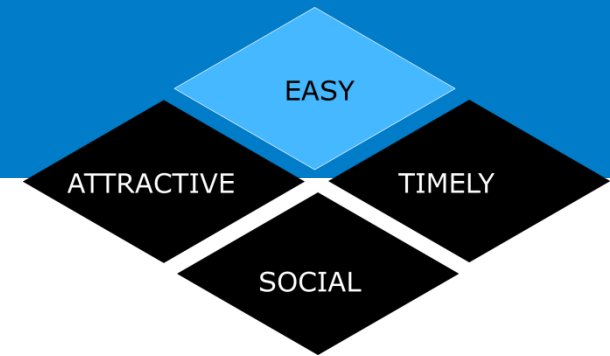


Uit de monitoring van 2013 blijkt dat ruim 20% van de onderzochte bedrijven het EEP volgens afspraak heeft uitgevoerd.



# Experiment: download rate





## Experimental design

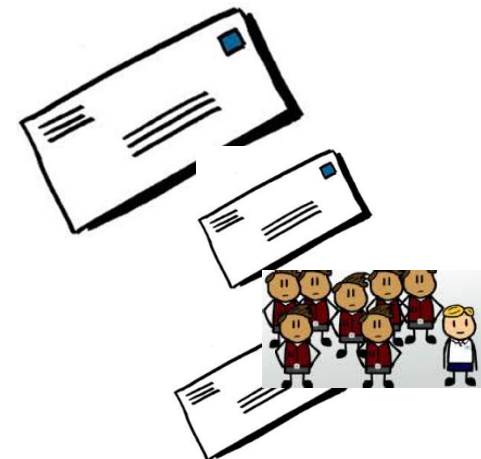
**Problem:** energy coordinators do not download reports

**Intervention:** August 2015: email with announcement and simple download; survey

**Metric:** # downloads; “contact manager” via follow-up survey

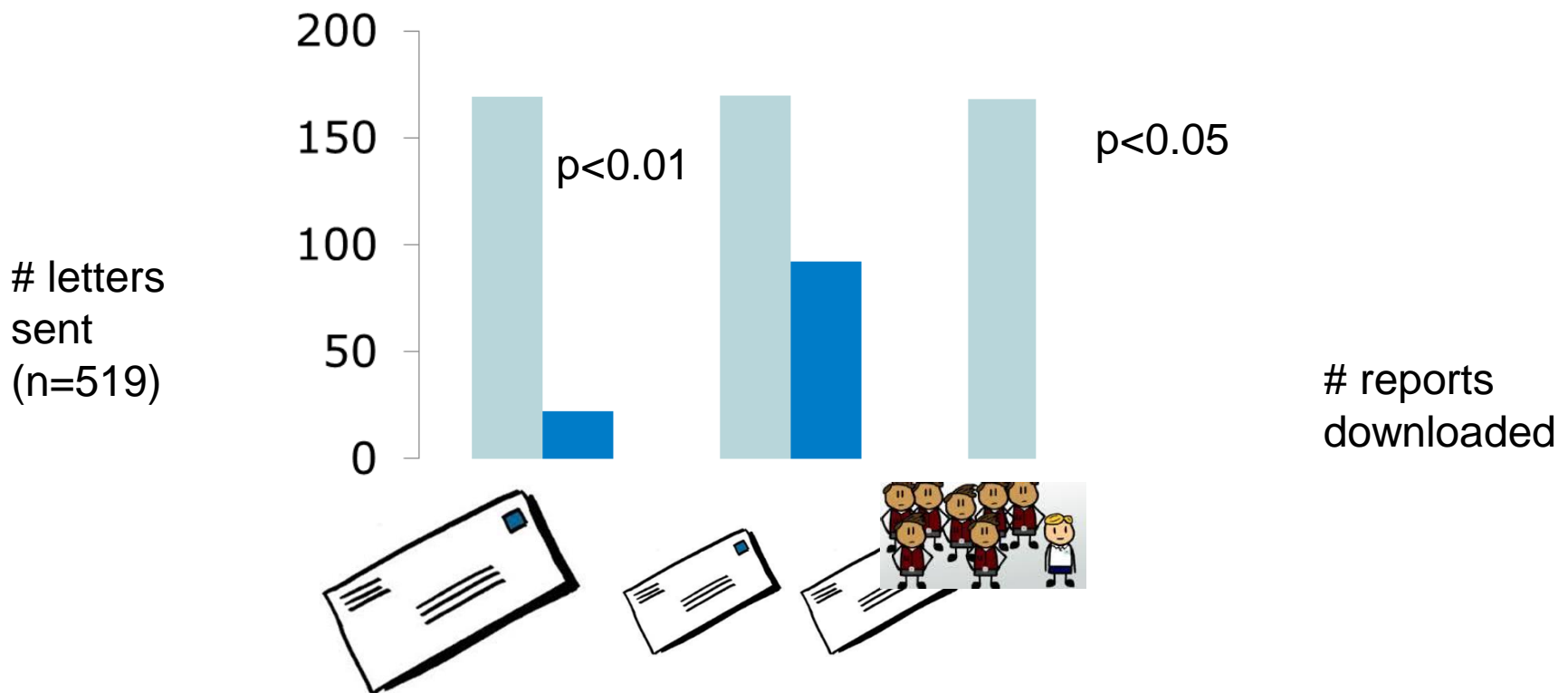
### Treatments:

1. Control: last year's email
2. Shortened email, simple download
3. Shortened email, simple download, social comparison





## Results





## Experimental design: CEO commitment





## Experimental design

**Problem statement:** energy efficiency no priority for CEO

**Intervention:** asking for explicit commitment of CEO

**Timing:** letters are sent between May – Oct 2016

- After report, during writing phase of energy 4 year plan

**Metrics:**

- % KJ saved
- # new measures implemented (april 2017)
- # measures in EEP 2017-2020
- # measures implemented in 2017



# Commitment letter



Rijksoverheid

I am proud to be a member of the Covenant

Name

Function

Company





ABC inc aims for



50%

10%

20%

30%

40%

50%

60%

70%

80%

90%

100%

Increase in energy efficiency per year



<- back

Yes, I declare my  
ambition for the EEP



## Conclusion

**Approach:** RCTs to increase contact between energy coordinator and CEO

- By communication social norm (letter trial)
- By broadcasting results among energy coordinators (download experiment)
- By asking for explicit commitment of CEO

### **Results:**

- Not yet in efficiency metrics (2016)
- But first tangible results that show approach is effective
- Developed feeling with motives of target group and other actors
- Support for new approach from policy directorate



## Discussion

- **Field research** is key; designing effective interventions is iterative process
- Many **impossibilities**:
  - data (lists of measures)
  - interventions (naming and shaming)
  - designs (heterogeneity)
- Partly **micromanagement**: cooperation and timing of utmost importance
- **Measurability** is an issue – none of our assumptions about data were correct
- Impact vs scientific approach: **Kitchen sink** (bundled interventions within one treatment) is tempting to get results
- Not much literature on behavioral experiments with **companies**



## Questions / contact:

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