

# Host community compensation in a CCS context: comparing the preferences of Dutch citizens and local government authorities



UK CCS Research Centre  
Issues in Governance and Ethics of CCS meeting  
Cambridge, 7 July 2015



Emma ter Mors  
Bart W. Terwel  
Leiden University, The Netherlands  
[emors@fsw.leidenuniv.nl](mailto:emors@fsw.leidenuniv.nl)

# CATO

Dutch national R&D program on CO<sub>2</sub> capture, transport and storage

—Consortium of industry, NGOs, scientists, government

—Budget:

CATO-1: 2004-2008; €25 million

CATO-2: 2009-2014; €65 million

**Social science research**  
**~ € 5.5 million**  
**(6% of total budget)**

[CATO-3: 2015- ; €.. million funding]

# Public opposition to energy projects in The Netherlands



[fracking, natural gas storage, offshore wind, CCS, natural gas extraction]

# CCS: Barendrecht, The Netherlands



## BURIED TROUBLE

Protesters saying “no to CO<sub>2</sub>” are just one roadblock facing carbon sequestration — a strategy that could help prevent dangerous climate change. **Richard Van Noorden** investigates.

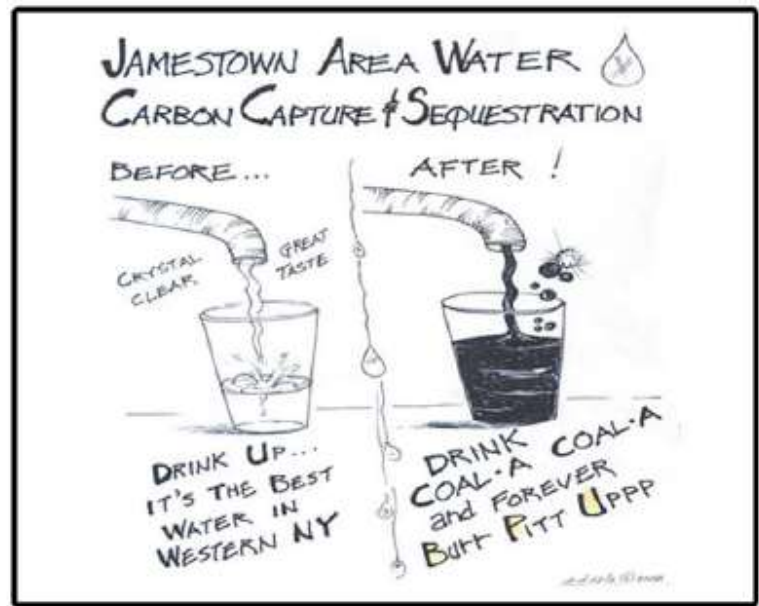




# CCS: Beeskow, Germany



# CCS: Jamestown, New York, USA



# CATO/Leiden University research on **Host community compensation**

—Host community compensation and equity adjustment

# CATO/Leiden University research on **Host community compensation**

- Host community compensation and equity adjustment
- The effectiveness of compensation in the context of CCS?



## Identification of factors and mechanisms in compensation

**Review** of the broader empirical literature on the potential of host community compensation in facility siting<sup>1</sup>

—Moderating factors

—Future research needs

→ Compensation is no silver bullet

**Experimental and survey research** on the potential of host community compensation (cause-effect inferences)<sup>2</sup>

<sup>1</sup>Ter Mors et al., 2012

<sup>2</sup>Terwel et al., 2014; Terwel & Ter Mors, 2015; Zaal et al., 2014

## **Terwel & Ter Mors (2015). Host community compensation in a carbon dioxide capture and storage (CCS) context: Comparing the preferences of Dutch citizens and local government authorities.**

### Aims:

- Examine the evaluations and relative preferences of citizens as well as local government authorities (LGAs) regarding different types of host community compensation measures that might be implemented in the context of CCS
- Examine similarities and discrepancies between the evaluative ratings and rankings of the public and those of LGAs
- Examine whether LGAs are able to accurately estimate the evaluations and relative preferences of the public, and vice versa (i.e., assumed similarities and discrepancies)

# Method

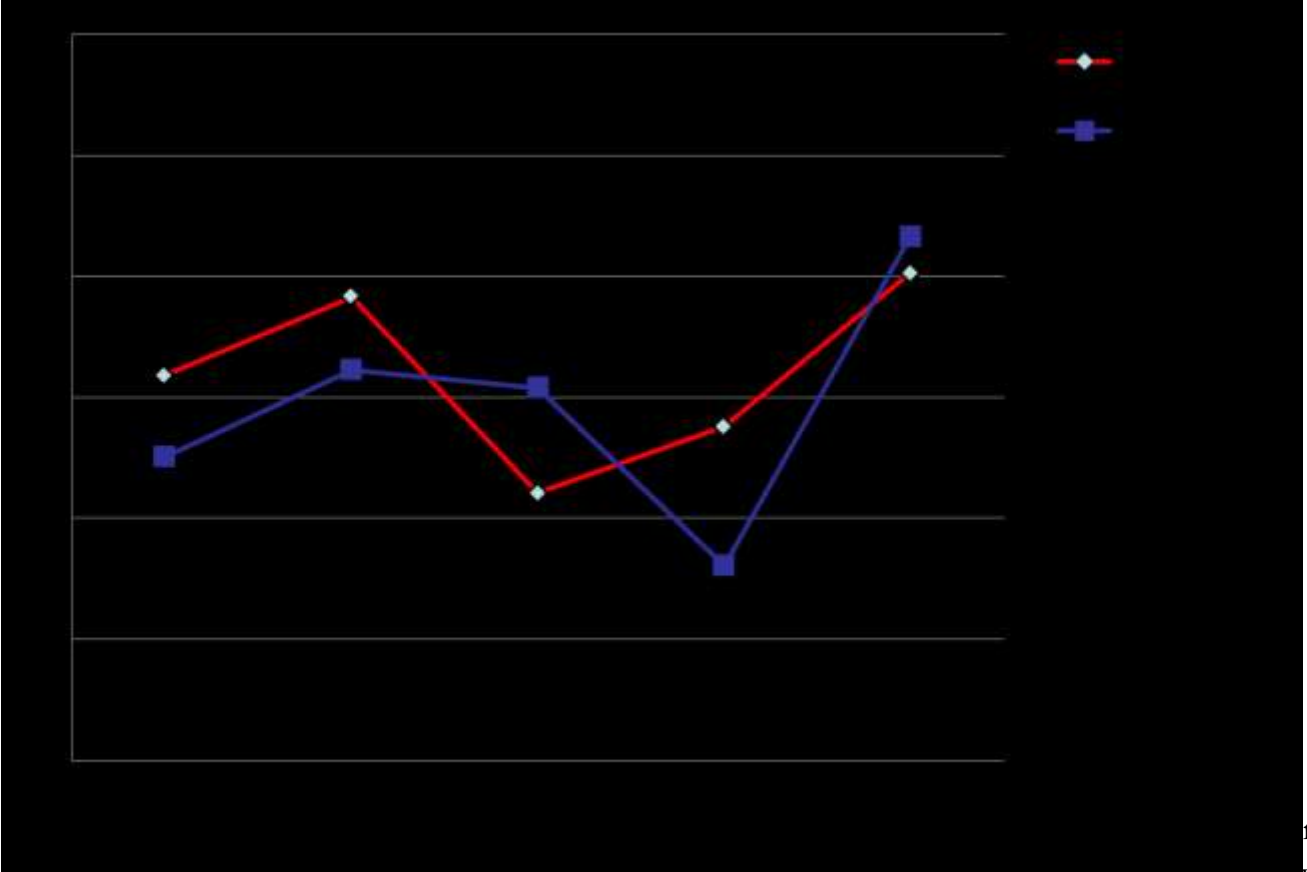
- Survey experiment
- Sample:
  - LGAs (mayors and aldermen)  $N = 114$
  - Citizens (stratified sample of TNS-NIPO panel)  $N = 431$
- Procedure
  - Background information about energy production, climate change and CCS
  - Introduction of compensation
  - Questionnaire
    - Evaluation of 5 types of compensation measures assuming that their municipality will be confronted with the transport and storage of carbon dioxide (7-point scales ranging from 1 = very bad/undesirable/inappropriate to 7 = very good/desirable/appropriate:  $\alpha s \geq .96$ )
    - Rank order the compensation measures (1 = the most desirable, 5 = the least desirable)
    - Explanation of choice of the most and least desirable compensation measure
- Four versions of the questionnaire (two for LGAs: two for citizens): own versus anticipation perspective

# Compensation measures

- A. Recreational amenities.** Improvement of local recreational amenities (e.g., a new public swimming pool; a park; a sports complex)
- B. Local economy.** Improvement of the local economy (e.g., creating new jobs for the local community; investing in roads and other infrastructure)
- C. Grant to local government.** Sum of money allocated to the municipal council (to be spent in its own discretion)
- D. Payments to individual households.** Sum of money for the inhabitants of the municipality (each household receives an amount of money to spend freely)
- E. Compensation fund.** Fund for the compensation of any damage or other negative consequences of carbon dioxide transport or storage in the region



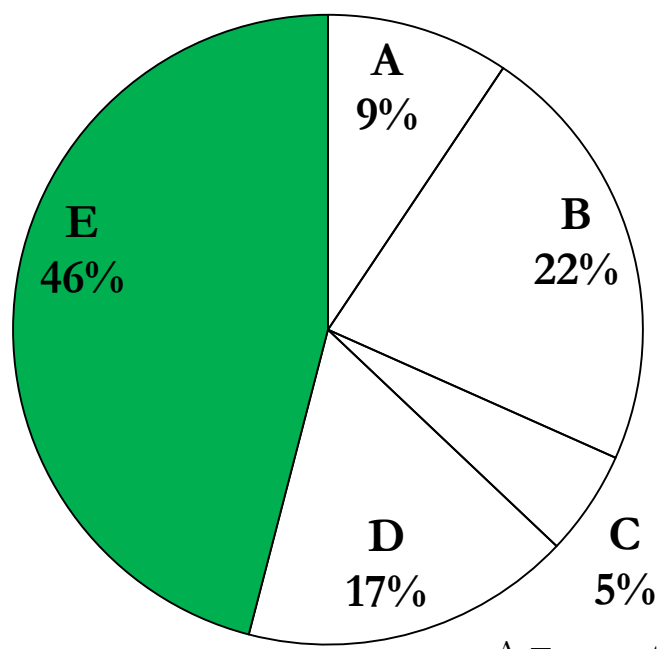
# Citizens versus LGAs: evaluation



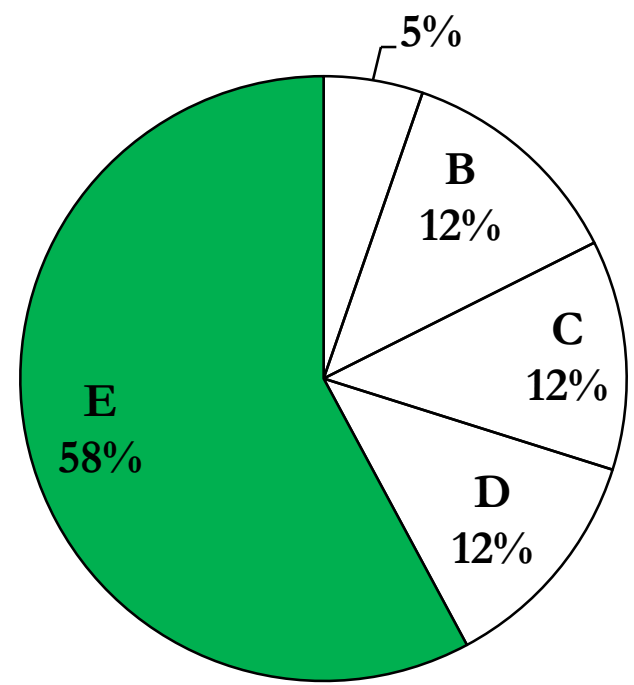
- menities
- B = local economy
- C = grant to local government
- D = payments to individual households
- E = compensation fund

# The most preferred compensation measures: (rank #1)

### Citizens



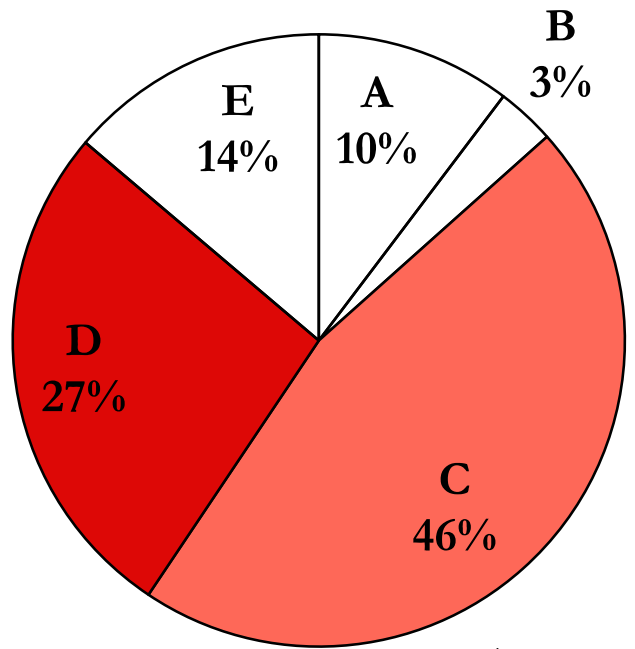
### LGAs<sup>2</sup>A



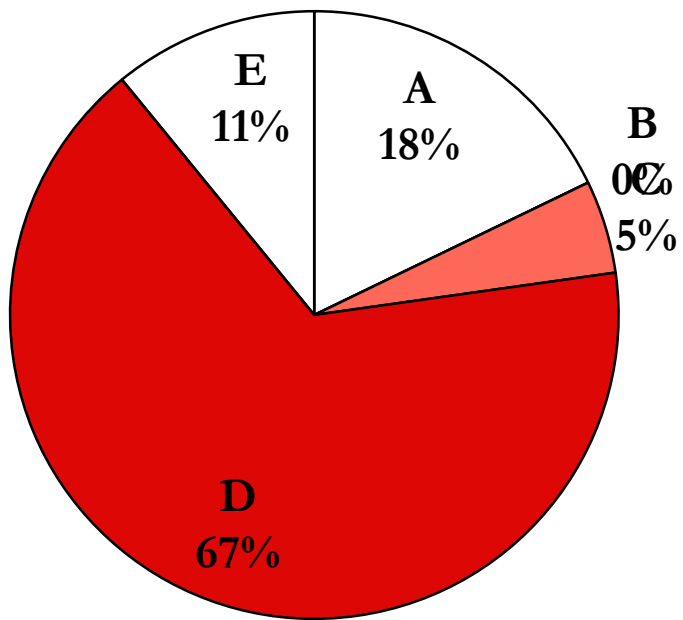
- A = recreational amenities
- B = local economy
- C = grant to local government
- D = payments to individual households
- E = compensation fund

# The least preferred compensation measures: (rank #5)

Citizens



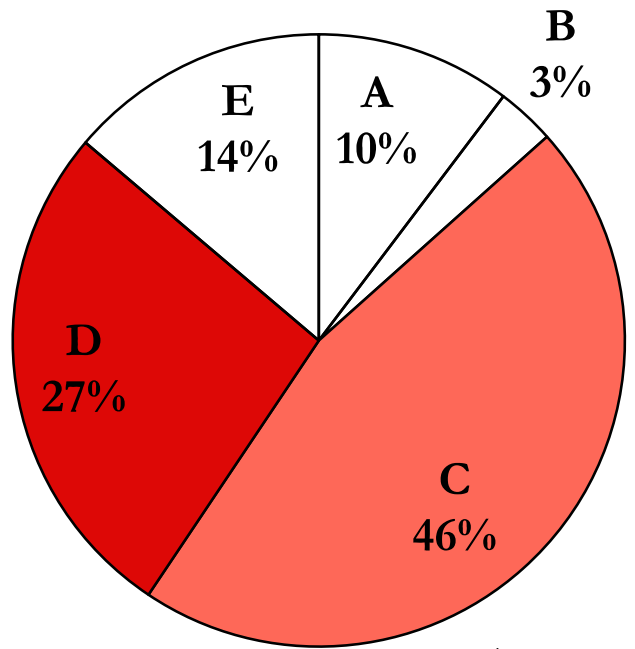
LGAs



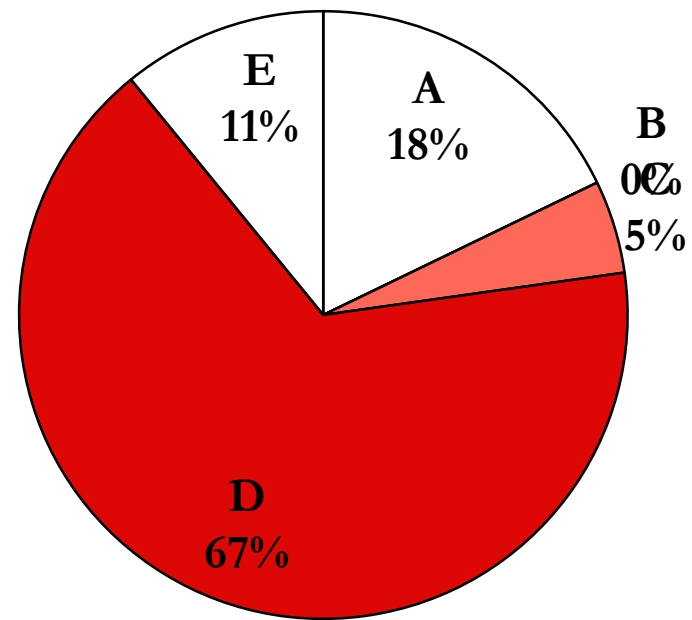
- A = recreational amenities
- B = local economy
- C = grant to local government
- D = payments to individual households
- E = compensation fund

# The least preferred compensation measures: (rank #5)

**Citizens**



**LGAs**



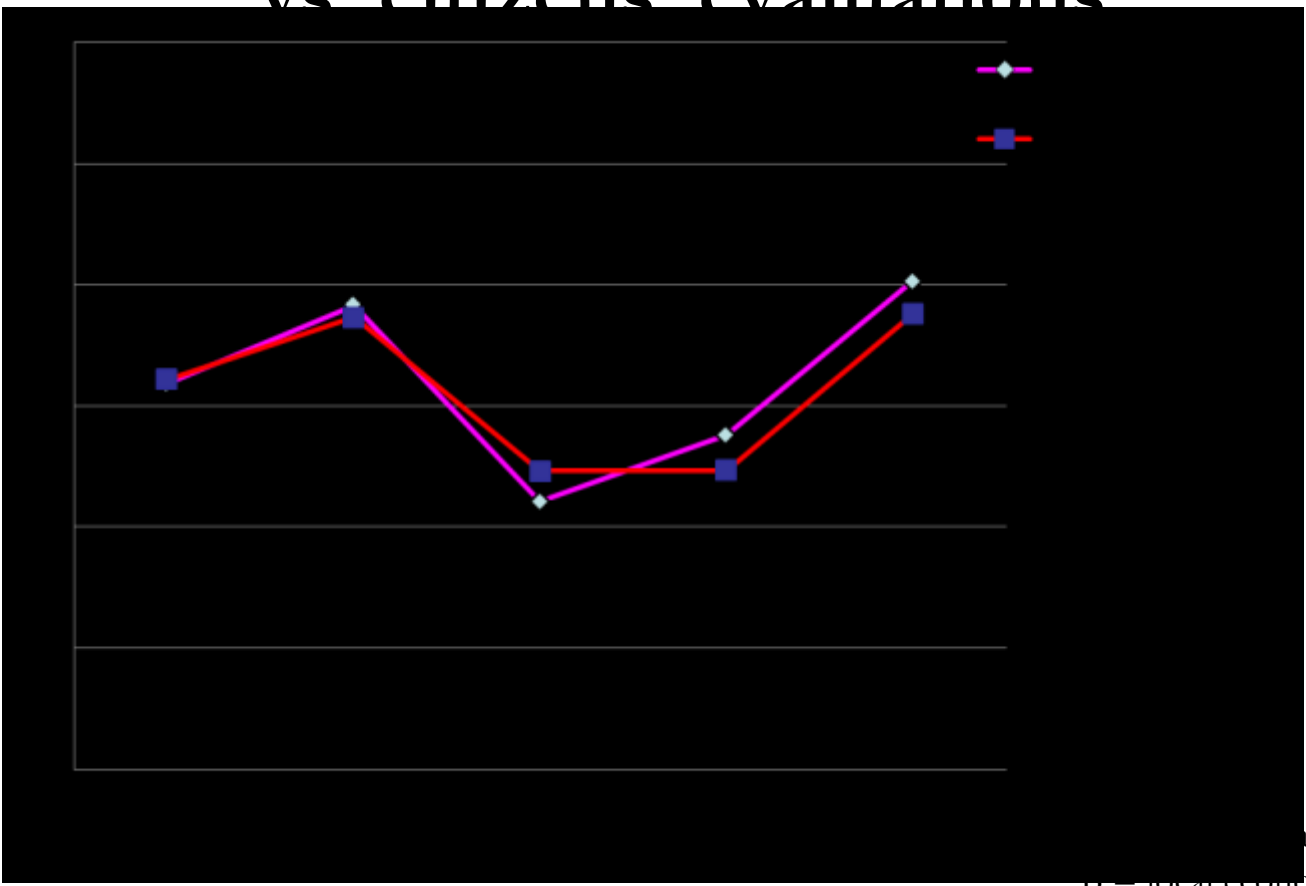
- A = recreational amenities
- B = local economy
- C = grant to local government
- D = payments to individual households
- E = compensation fund

“They [LGAs] will use this money for matters that do not benefit the residents; instead, they will use it for their own good, like a new interior for city hall, optimizing computers, etc.”

“Bribery....Today’s gain, but the risks lie in the future”

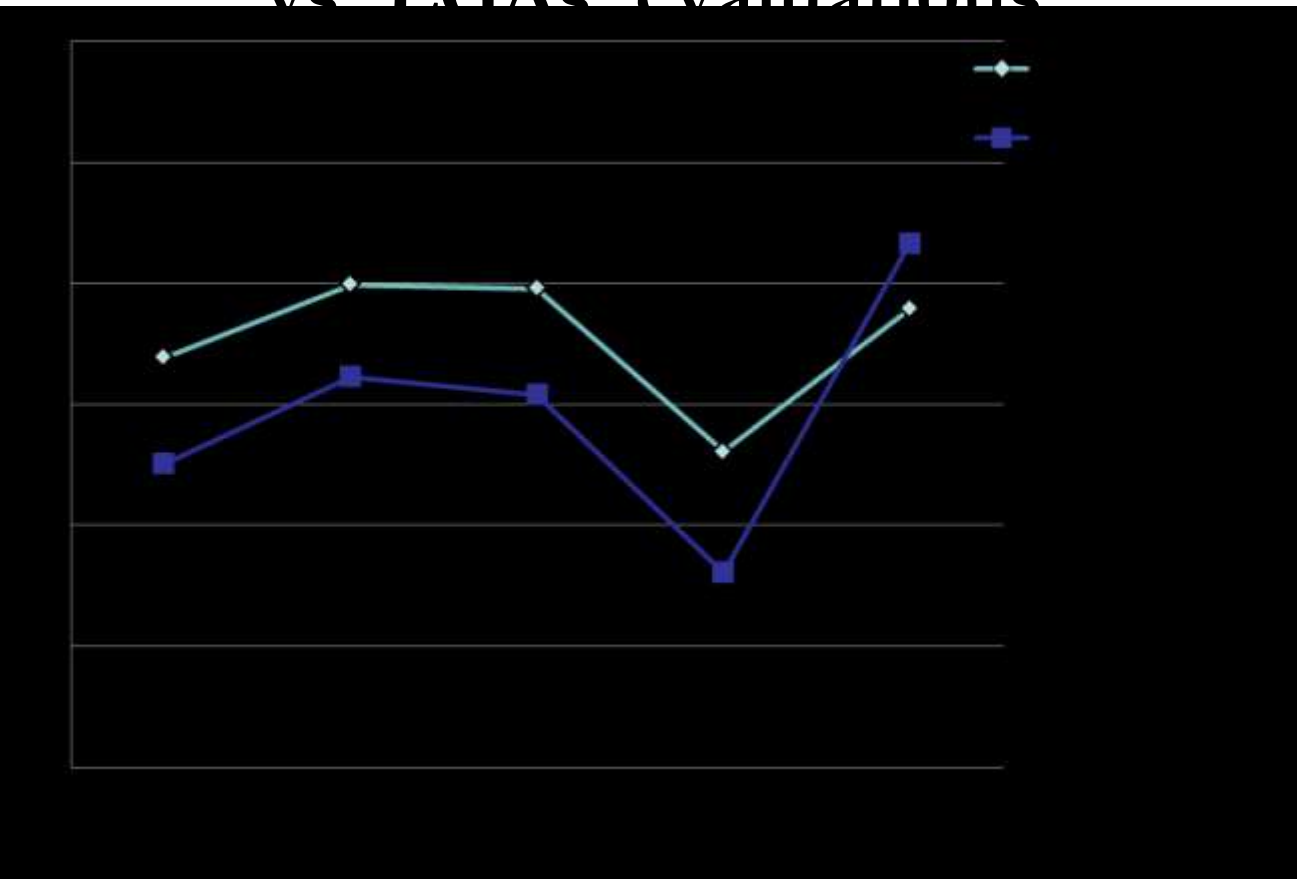


# LGAs' anticipation of evaluations citizens vs citizens' evaluations



- A = local amenities
- B = local economy
- C = grant to local government
- D = payments to individual households
- E = compensation fund

# Citizens' anticipation of evaluations LGAs vs. LGAs' evaluations



- A = ...
- B = local economy
- C = grant to local government
- D = payments to individual households
- E = compensation fund

## Conclusions

- Citizens and LGAs are most positive about a fund to compensate for any negative impacts of local CCS activities; However, citizens and LGAs differ in their ratings and rankings of the other four compensation measures
- Citizens are least positive about monetary compensation in the form of direct payments to individual households or a grant to local government → taboo trade-off? (Zaal et al., 2014)
- Citizens assume that LGAs are more positive about four out of the five compensation measures than they actually are, whereas LGAs perform very well in estimating the evaluations and relative preferences of citizens
- Consultation of both LGAs and citizens is important (Terwel et al., 2014)

**Thank you for your attention**

**Emma ter Mors, Leiden University**

**Contact: [emors@fsw.leidenuniv.nl](mailto:emors@fsw.leidenuniv.nl)**

References:

Ter Mors, E., Terwel, B.W., & Daamen, D.D.L. (2012). The potential of host community compensation in facility siting. *International Journal of Greenhouse Gas Control*, 11, S130-S138.

Terwel, B.W., Koudenberg, F.A., & Ter Mors, E. (2014). Public responses to community compensation: The importance of prior consultations with local residents. *Journal of Community and Applied Social Psychology*, 24 (6), 479-490.

Zaal, M.P., Terwel, B.W., Ter Mors, E., & Daamen, D.D.L. (2014). Monetary compensation can increase public support for the siting of hazardous facilities. *Journal of Environmental Psychology*, 37, 21-30.

Terwel, B. W. & Ter Mors, E. (2015). Host community compensation in a carbon dioxide capture and storage (CCS) context: Comparing the preferences of Dutch citizens and local government authorities. *Environmental Science & Policy*, 50, 15-23.