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Tools for local political governance.

- Local authorities have to permit new initiatives
- There is an amount of uncertainty involved
- Risk comparison is helpful
- Even new uncertain risks can be 'guesstimated'
- Often classical risks become smaller
- The risk mixing console helps comparing risks using the Disability Adjusted Life Year of the WHO as a measure
- This presentation introduces the risk mixing console and we want to discuss its usefulness for the REV with the participants





- BOVEN is a group of decentral politicians: mayors, aldermen and provincial executives: politicians for a safe energy transition
- BOVEN helps to combine the responsibility for a safe energy transition with the societal need to realise the energy transition
- The ministry of Economic Affairs and Climate is a partner in BOVEN.
- Several guidelines have been published up to now.





- Local authorities have to decide

Most initiatives are local to be permitted in the Netherlands

Fun fact: no permit necessary for H₂-high volume piping

- Society has a risk perception that local authorities have to address

Well known fact:

- Involuntary risk are perceived 1000 worse than voluntary risks
- New, technological risks are perceived worse than existing risks

- City councils behave just like ordinary people 😊
- So how do we reconcile perception and reality?
- BOVEN has developed a new tool. And would like to have your opinion on this for broader use.



- The ET causes new risks, a.o.
 - H₂ : explosion
 - wind turbines: sound and falling blades
 - Local battery: fire
 - Solar energy: fire
- These new risk have a different effect on a local, regional or national scale.
- The ET makes some classical risk smaller, a.o.
 - Air pollution
 - Transport of fossil fuels
 - CO-intoxication
- Again, these risk are different depending on the scale of consideration.



- Accepted as a principle by the permitting authorities for Chemelot: a new activity is (only) allowed as the integral safety increases.

INTEGRALE VEILIGHEID

- Eén van de leidende uitgangspunten TVC is dat de integrale veiligheid altijd moet toenemen (zie ook NOVI)
- Integrale benadering betekent alle relevante aspecten meewegen, waar mogelijk in DALY's (ook geluid en verkeer)
- Ja, dit is technisch maar het creëert 'risicoruimte' waarover zinvol besloten kan worden



- You have to fill in the new energy form you want to consider: solar, wind, biomass, H₂ for heating or geothermic.
- The scale you want to focus on: local (+ number inhabitants), regional (+number of inhabitants), national or worldwide.
- Optional: chose a risk mitigation measure for comparison. For example sound isolation or the construction of a roundabout.



- A comparison of the gain or loss of 'healthy life years'. More precise the delta in terms of Disability Adjusted Life Years
- Lets look at the example of wind turbines. It is the delta between energy production using fossils causing air pollution and energy production using wind turbines causing noise and a very small extra risk of falling blades:
 - You loose DALY's because of sound and falling blades
 - You win DALY's because of less air pollution.
- So note that occupational health effects are not part of the risk mixing console.



- New wind turbines in the municipality of Beuningen.

MER-alternatieven van Windpark Beuningen.



- We consider the two new wind turbines of 4,8 MW each in the red circle.
- Beuningen has 26,000 inhabitants and is part of the Gelderland with 2 million inhabitants

The input parameters



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- Question: Number of people within the 10^{-6} safety contour?
Answer: 0
- Question: number of people passing along roads within the 10^{-6} safety contour?
Answer: 1 per minute for both turbines, so 2,880 per day



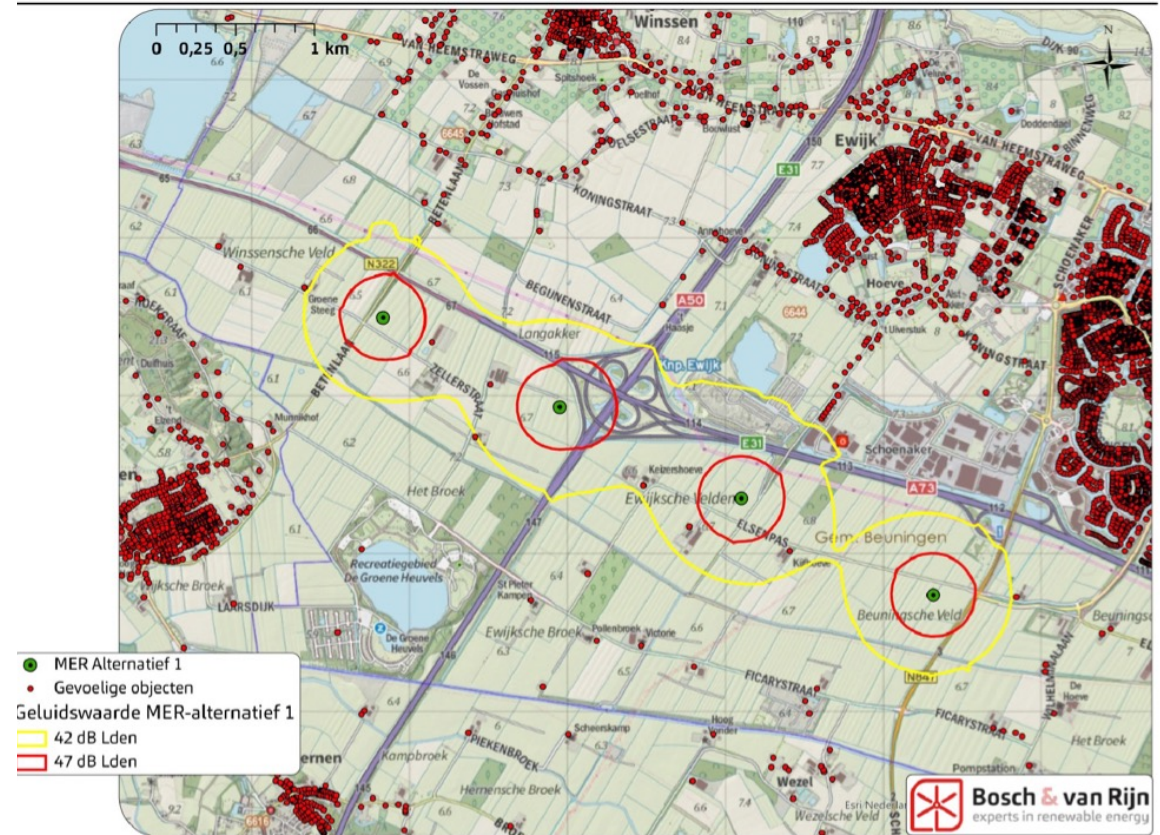
The input parameters



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- Question: how many people live within the 45-47 dB contour, the 40-44 dB contour and the 35-39 dB contour?
Answer: 2, 20 en 100 respectively

jur 8 L_{den} 47- en 42 dB-contour alternatief 1 – GE 4.8 158 op 165m ashoogte

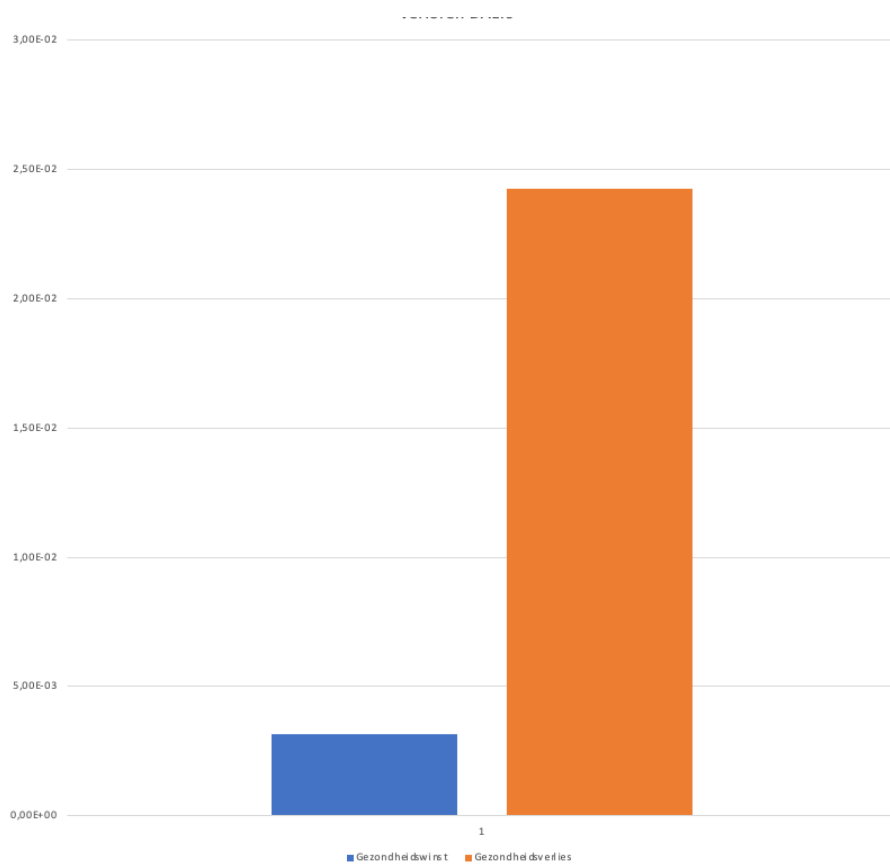


The perspective we are interested in



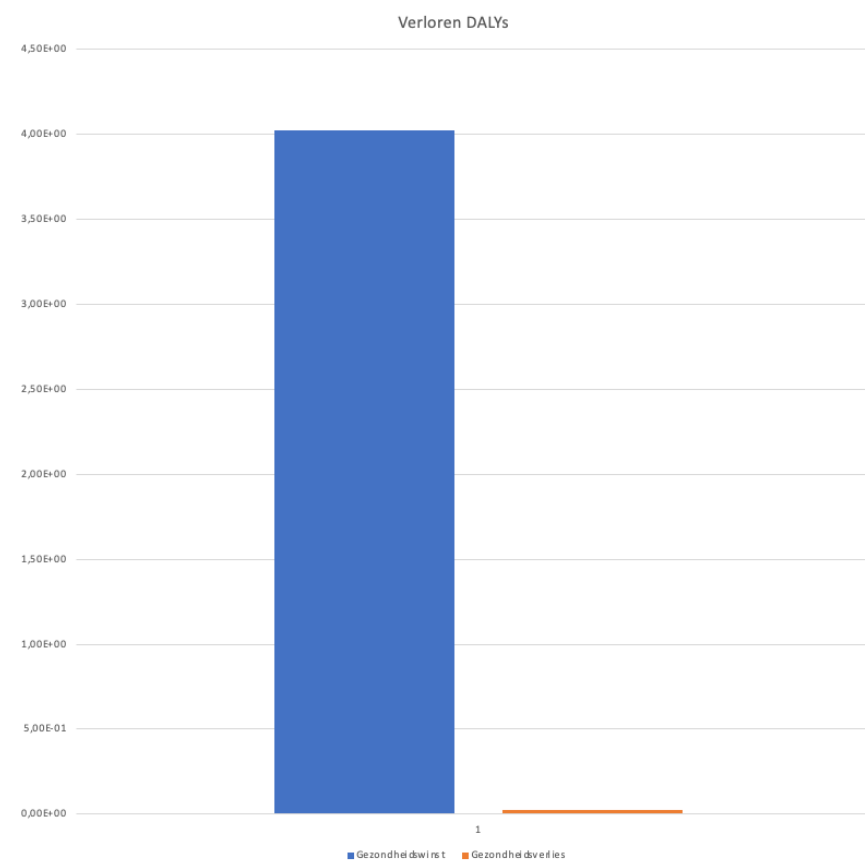
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- The scale ... we present local and worldwide



DALY gain p.y. 0.004

DALY loss p.y. 0.02



<- DALY gain p.y. 4

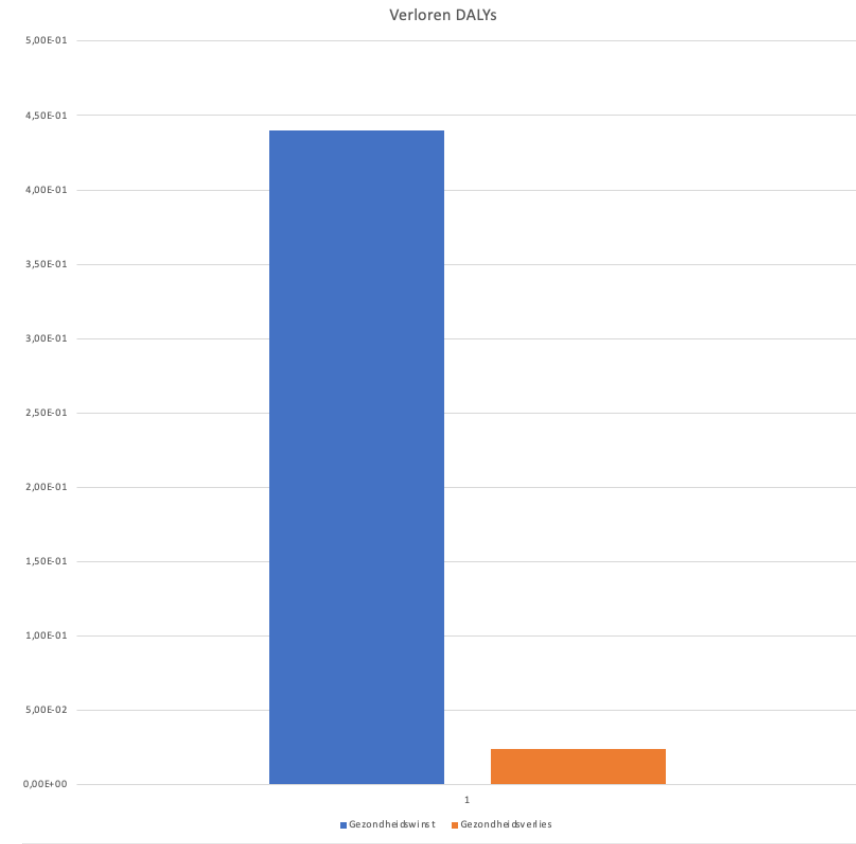
DALY loss p.y. 0.02

A possible comparison



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- Constructing a roundabout for 2 cars per minute: gain of roundabout versus local loss wind turbine

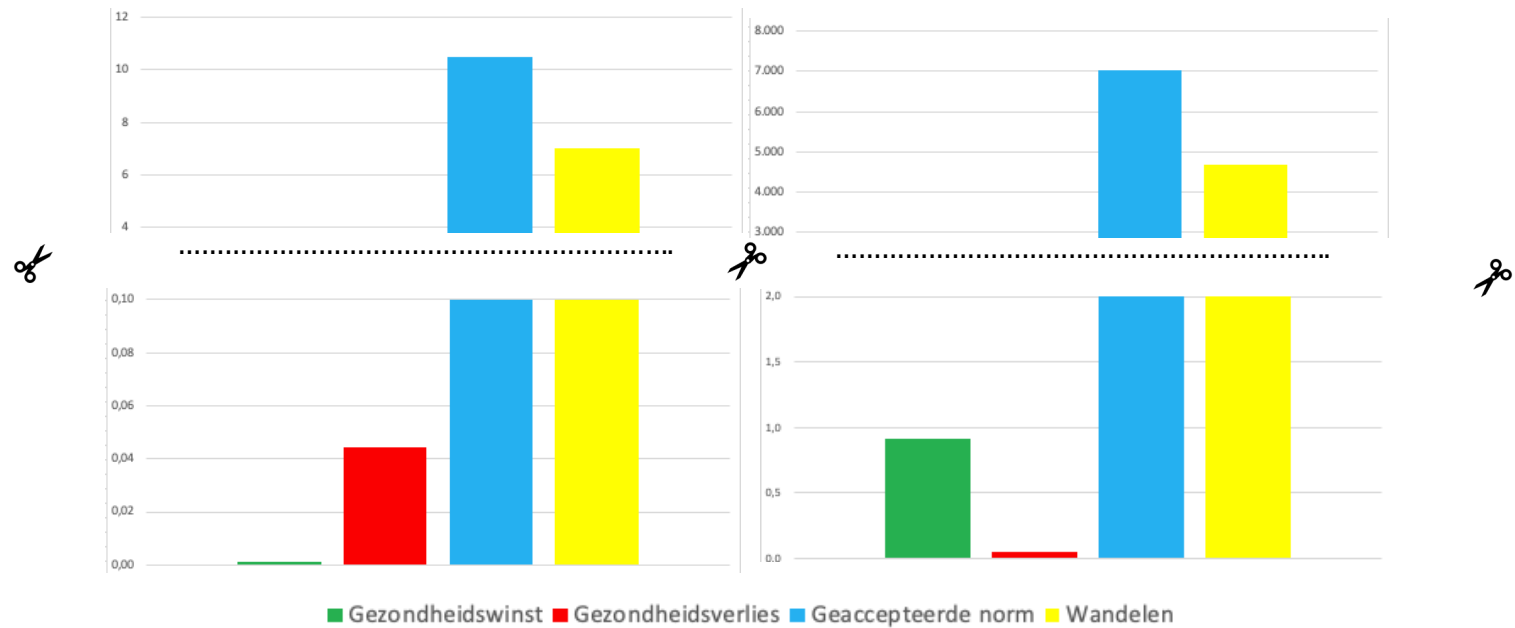


DALY gain p.y. 0.5

DALY loss p.y. 0.02



- Again local and Mondial, but now versus Dutch 10^{-5} norm and walking on the street





- Does this instrument give a useful insight when deciding about permits?
- Could you use a form of it in the communication with the general public and authorities via the Atlas Leefomgeving?

Thank You



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All feedback is welcome: i.helsloot@crisislab.nl

The presentation and the risk mixing console can be found at www.werkgroep-boven.nl In Dutch ...