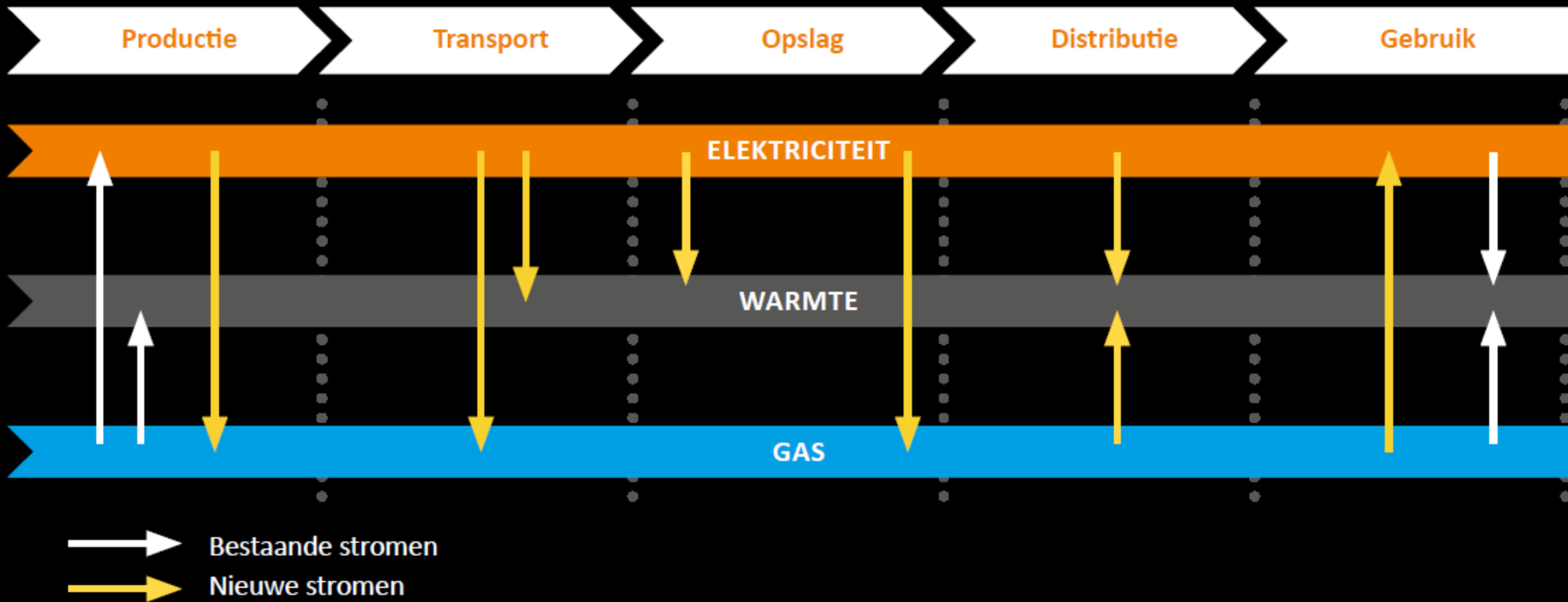


Energieopslag- en conversietechnologie

Stefan Olsthoorn – Net Op Groen

AES Netherlands Holdings B.V. 	AEVO B.V. 	Alfen B.V. 	Alliander 	Frames 	Generate Technology Group 	Greenspread B.V. 	GreenLeven 
AquaBattery B.V. 	ATEPS Nederland B.V. 	Batenburg Energietechnik 	Bredenoord 	HoCoSto B.V. 	IF Technology 	Industriepark Kleefse Waard 	Indutecc Renewable Solutions 
Calix Infrastructure 	Centurion Battery B.V. 	CMS 	Coöperatie Deltawind UA 	Iwell B.V. 	JP-Energiesystemen B.V. 	LKAB Minerals BV 	Metalot Circularity Center Cranendonck (M3C) 
DELTA21 	DNV GL 	Dr Ten Innovatie & Prestatie 	Dutch Institute for Fundamental Energy Research (DIFFER) 	MTU Benelux B.V. 	Norton Rose Fulbright LLP 	O3 Systems B.V. 	Proton Ventures BV 
E-ENERGYSTORAGE 	e-Power BV 	E.D.Mij B.V. (slim energie voorspellen en handelen) 	Eaton Industries (Netherlands) B.V. 	Recoy B.V. 	Redox Storage Solutions 	S4 Energy B.V. 	SBM Offshore 
ECN 	Ecovat® 	Elestor BV 	Emmett Green 	SOLARWATT B.V. 	Solenco Power NV 	Stedin 	StoredEnergy 
Eneco Wind B.V. 	EnergyStock B.V. 	Enexis B.V. 	ENGIE Ventures & Integrated Solutions B.V. 	Straightforward 	Super-B Lithium Batteries 	Technische Universiteit Delft 	Tesla 
EST-Floattech B.V. 	Eurotronic B.V. 	Exergy Storage 	FE Consultancy B.V. 	Time Shift B.V. 	Top Systems B.V. 	Trinergie 	V-Storage 
				Ventolines B.V. 	Wageningen UR ACRES 	Wildlife Green Organic B.V. 	

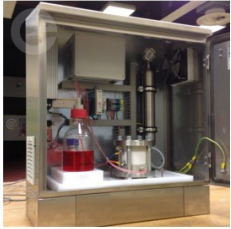
Integratie van energieketens







Demo system



GEN1 system (pilot)



GEN2 system (pilots)

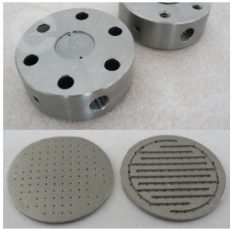


2015

2016

2017

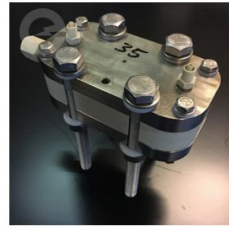
2018



First test cells



GEN1 stacks

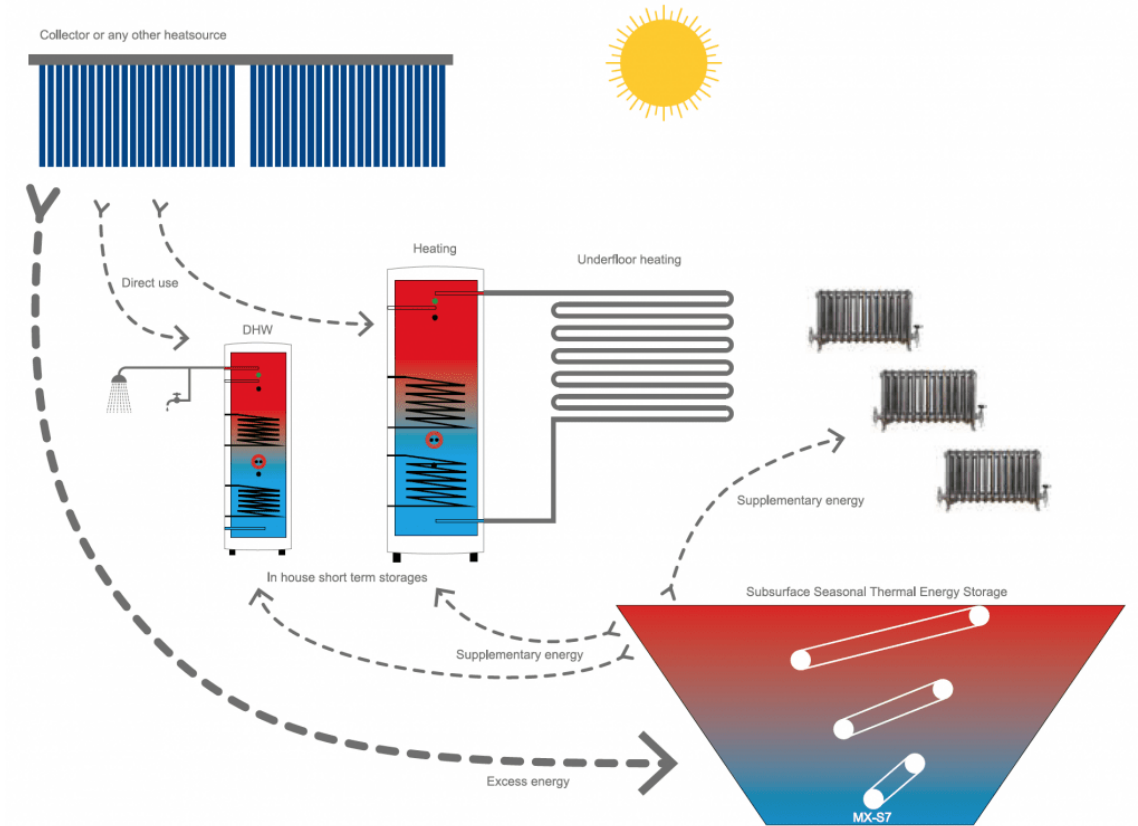
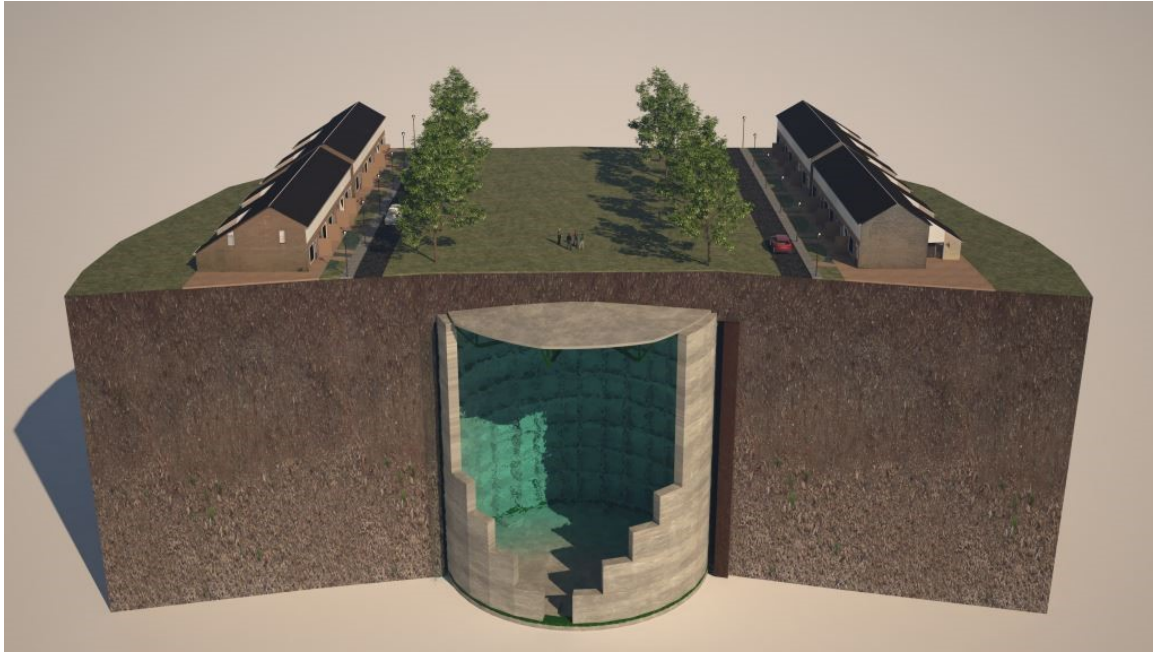


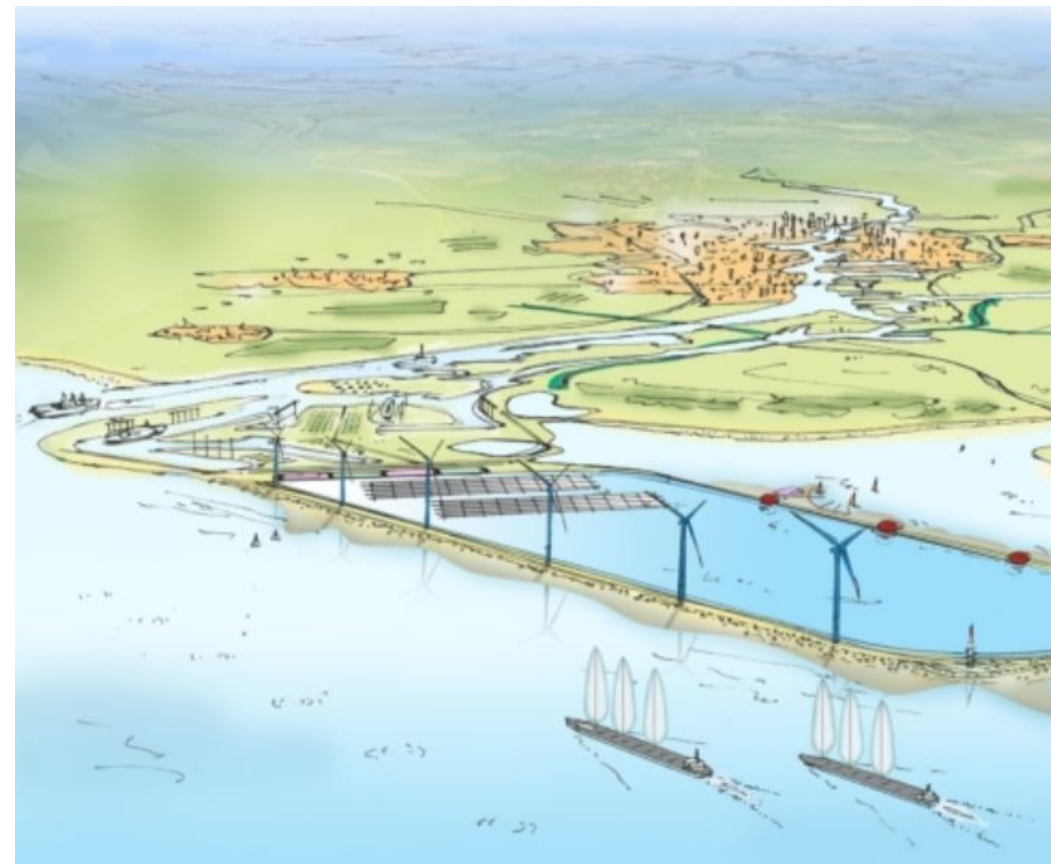
GEN2 stack



GEN3 stack

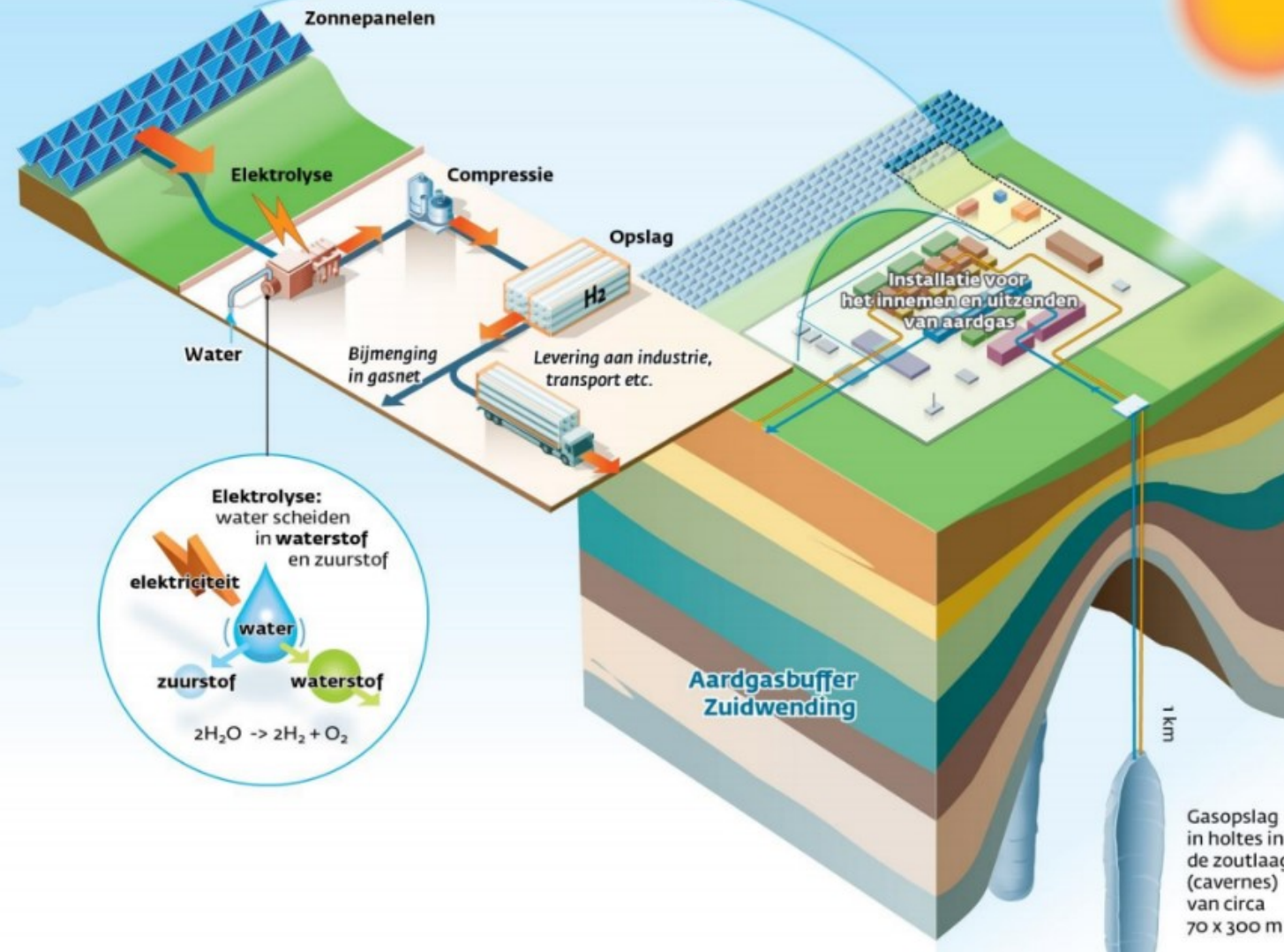






HyStock pilotproject

Waterstof uit elektriciteit opslaan in de aardgasbuffer



Energy
Storage NL



POWERED
BY DUTCH
TECHNOLOGY

SCHAARSTENIVEAU (ENEXIS)

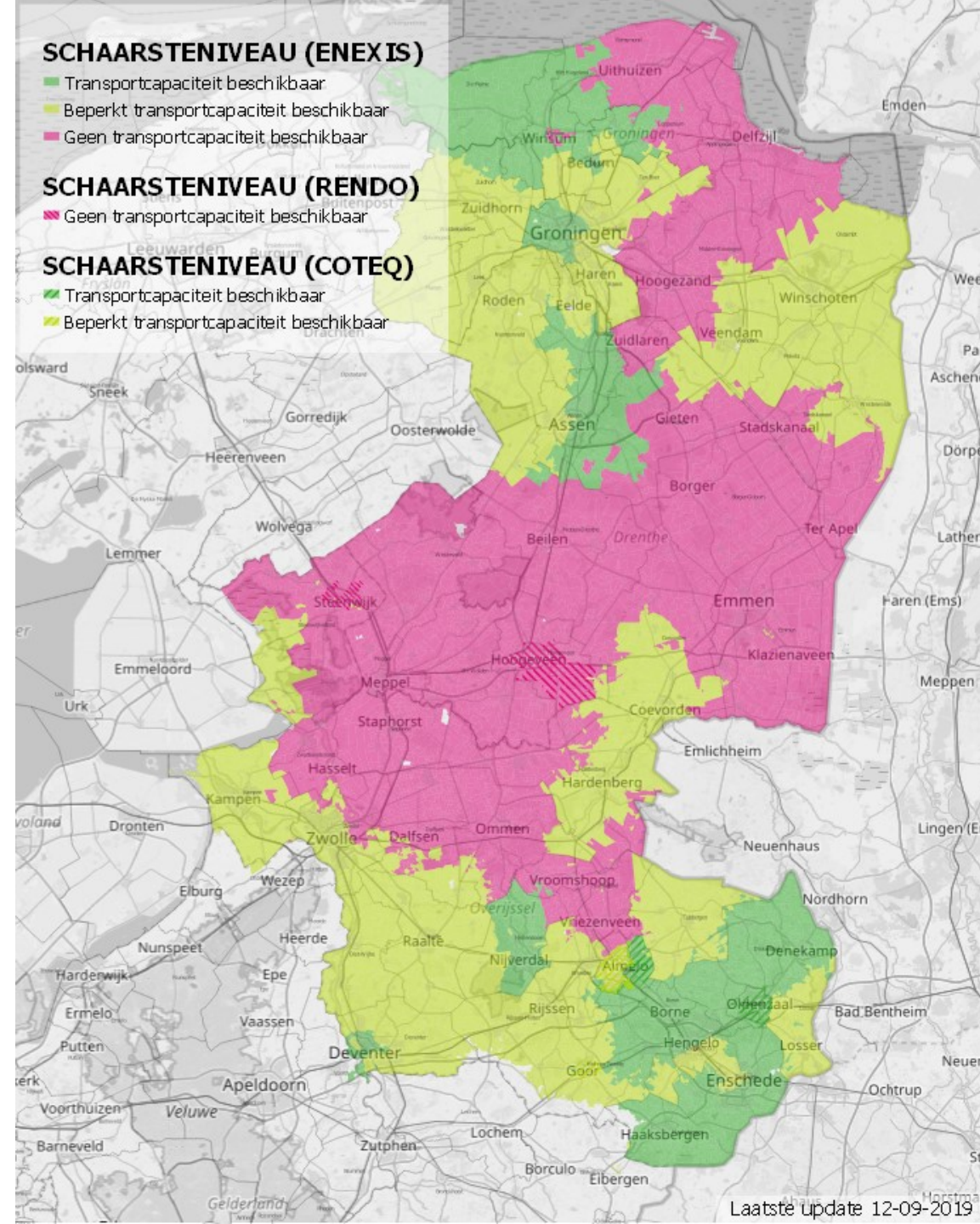
- Transportcapaciteit beschikbaar
- Beperkt transportcapaciteit beschikbaar
- Geen transportcapaciteit beschikbaar

SCHAARSTENIVEAU (RENDO)

- Geen transportcapaciteit beschikbaar

SCHAARSTENIVEAU (COTEQ)

- Transportcapaciteit beschikbaar
- Beperkt transportcapaciteit beschikbaar



Laatste update 12-09-2019

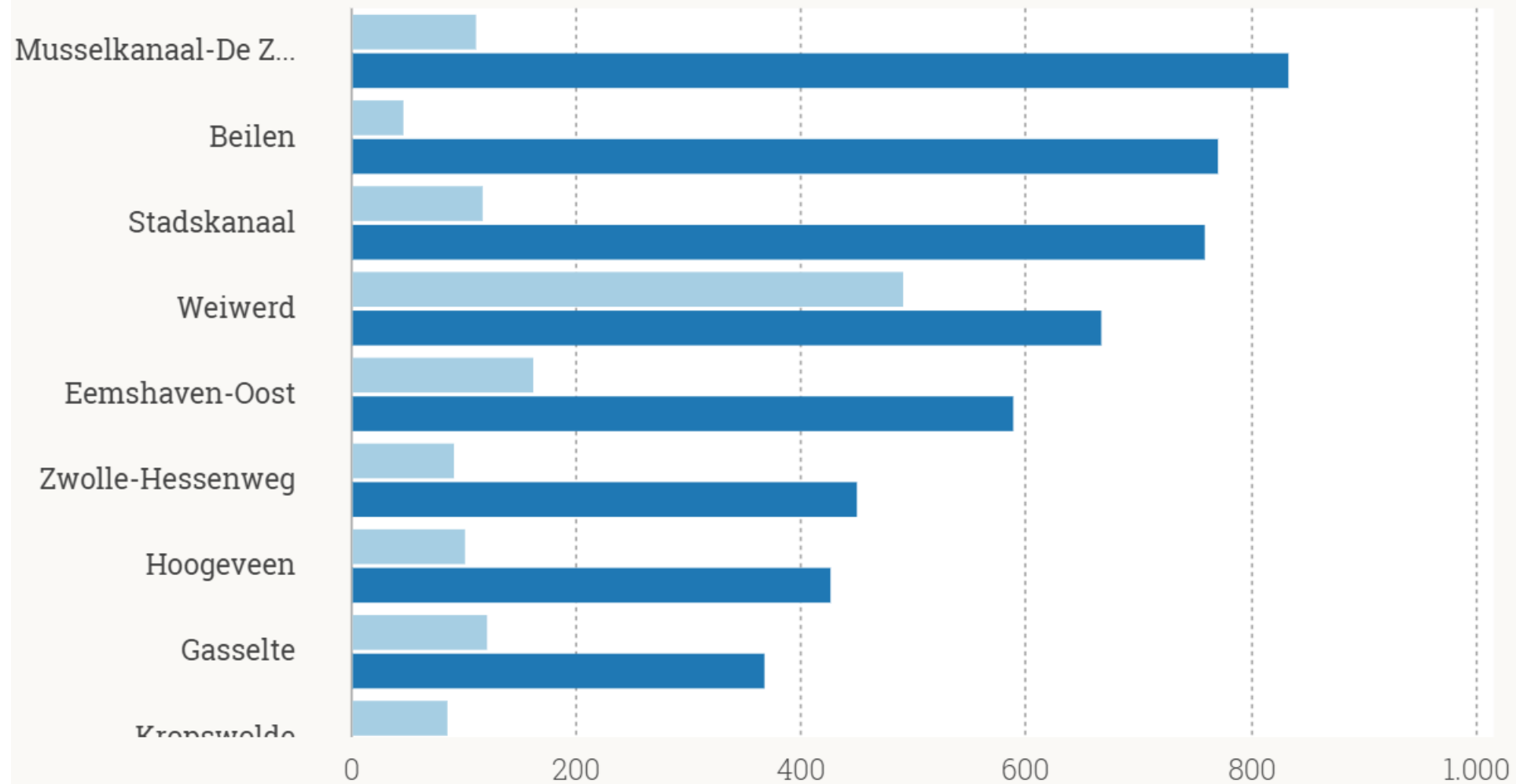
Energy
Storage NL



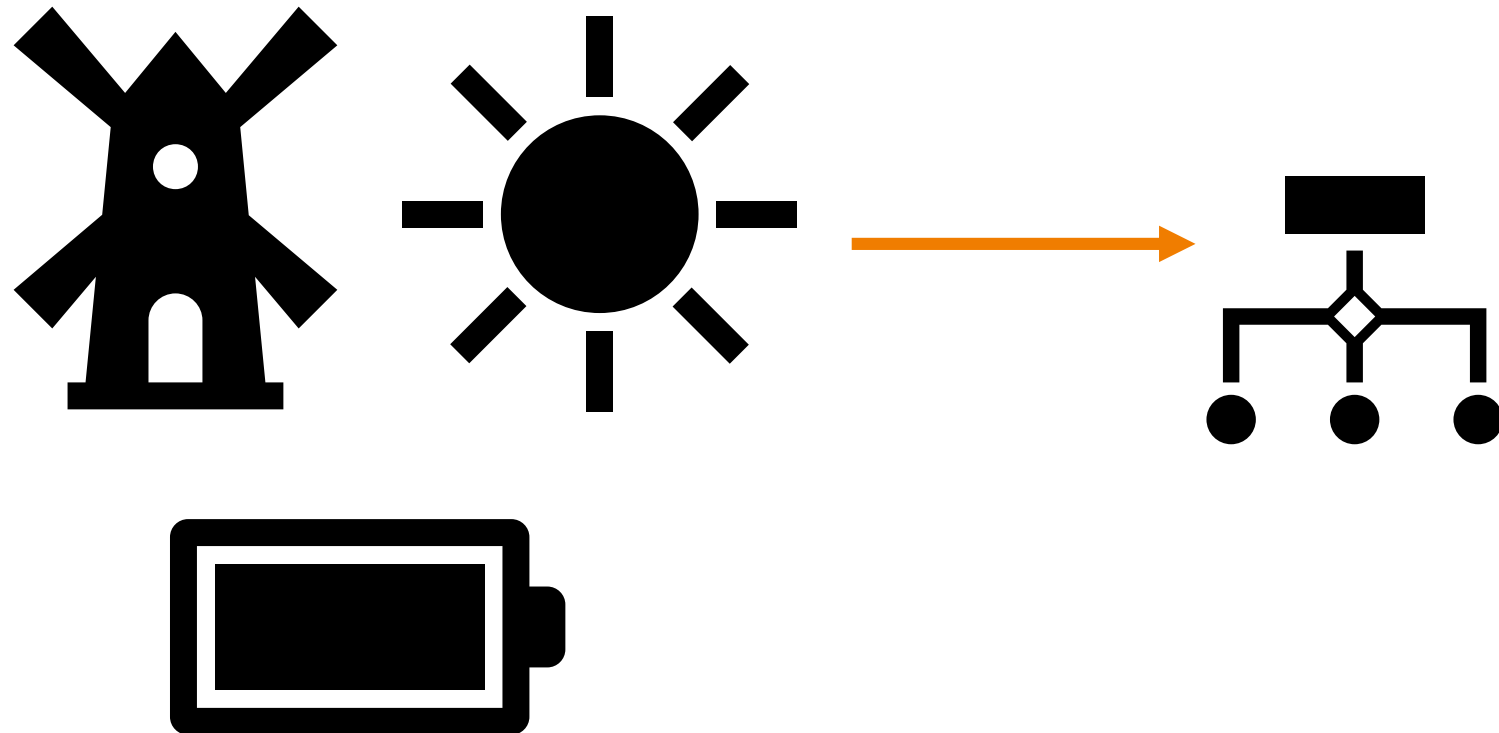
POWERED
BY DUTCH
TECHNOLOGY

Verskil tussen beschikbaar en gevraagd vermogen per hoogspanningsstation

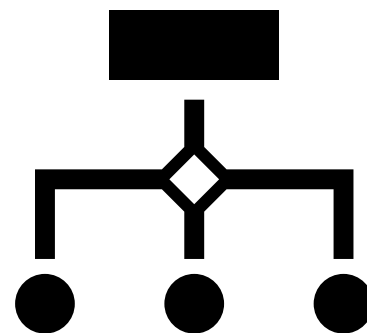
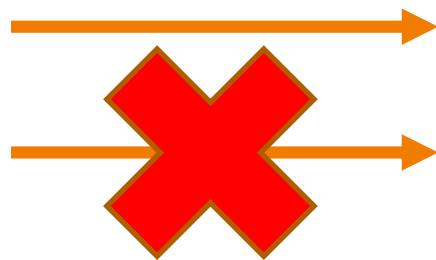
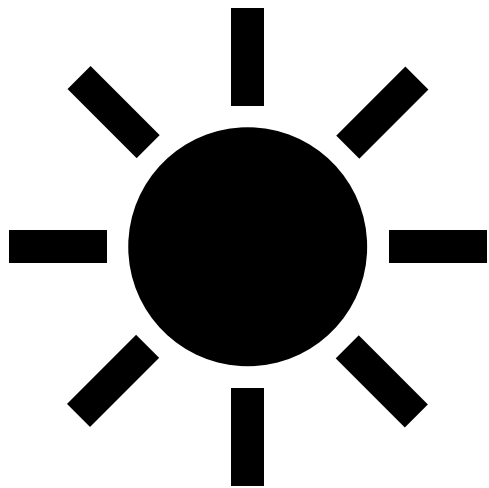
Beschikbaar vermogen Verwacht gecontracteerd vermogen



Aansluiting delen

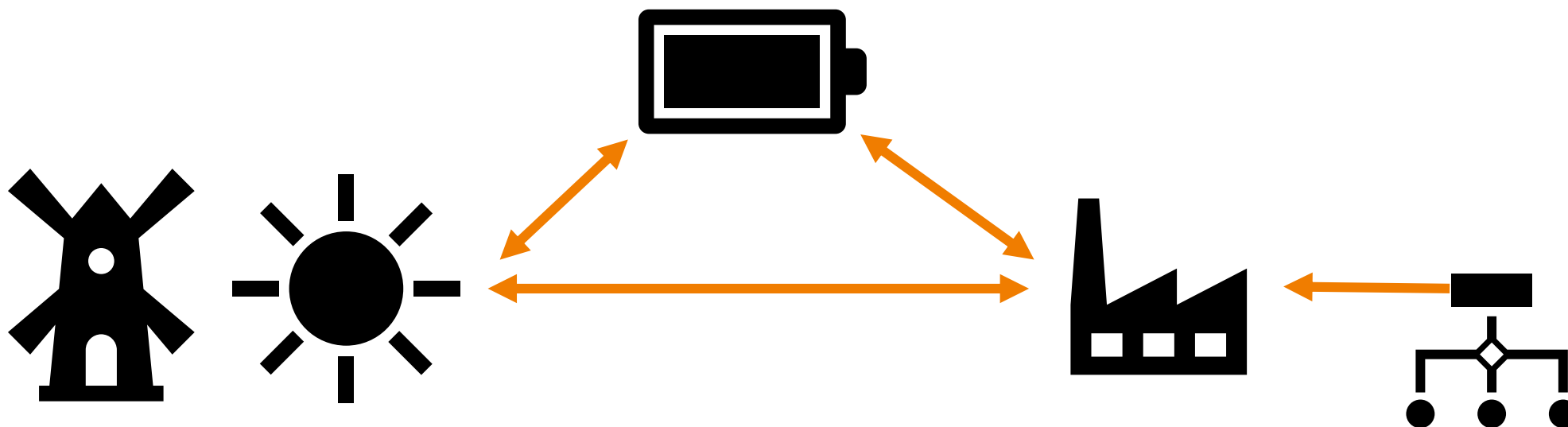


Geen redundantie bij invoeding (n-1)

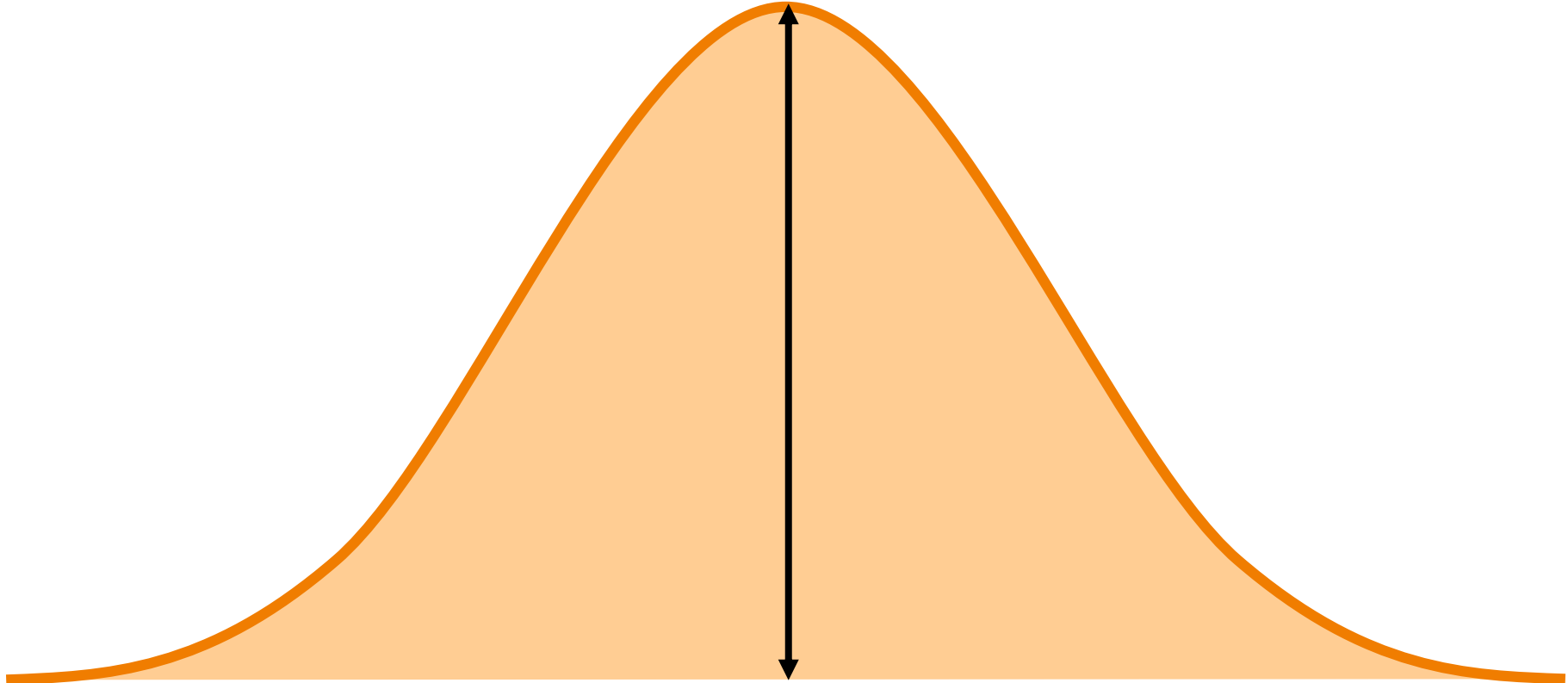


IN DE PRAKTIJK

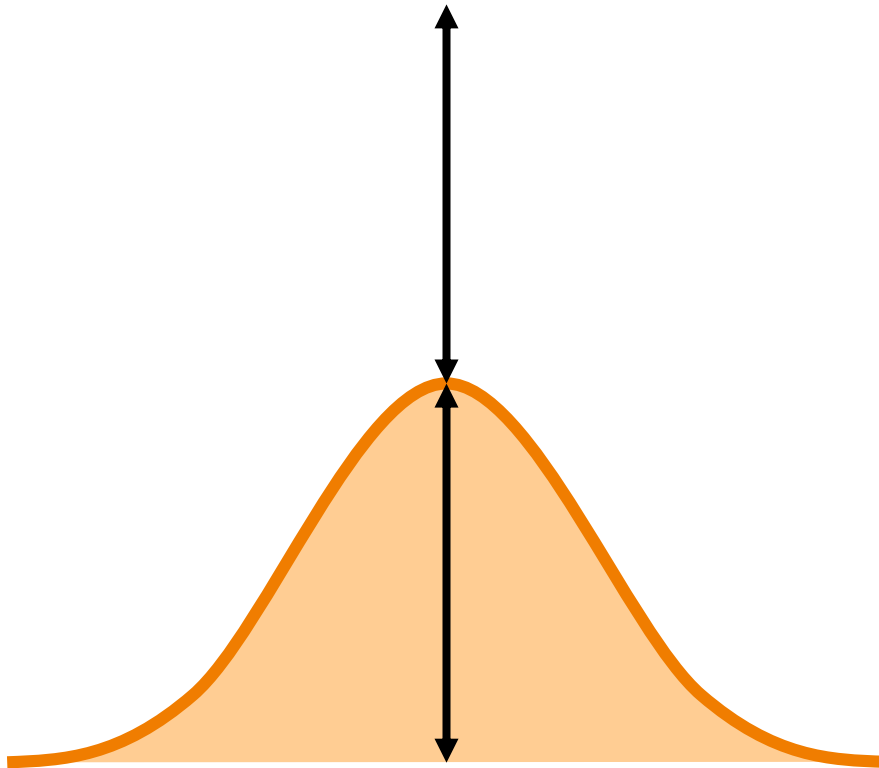
Gesloten distributienet



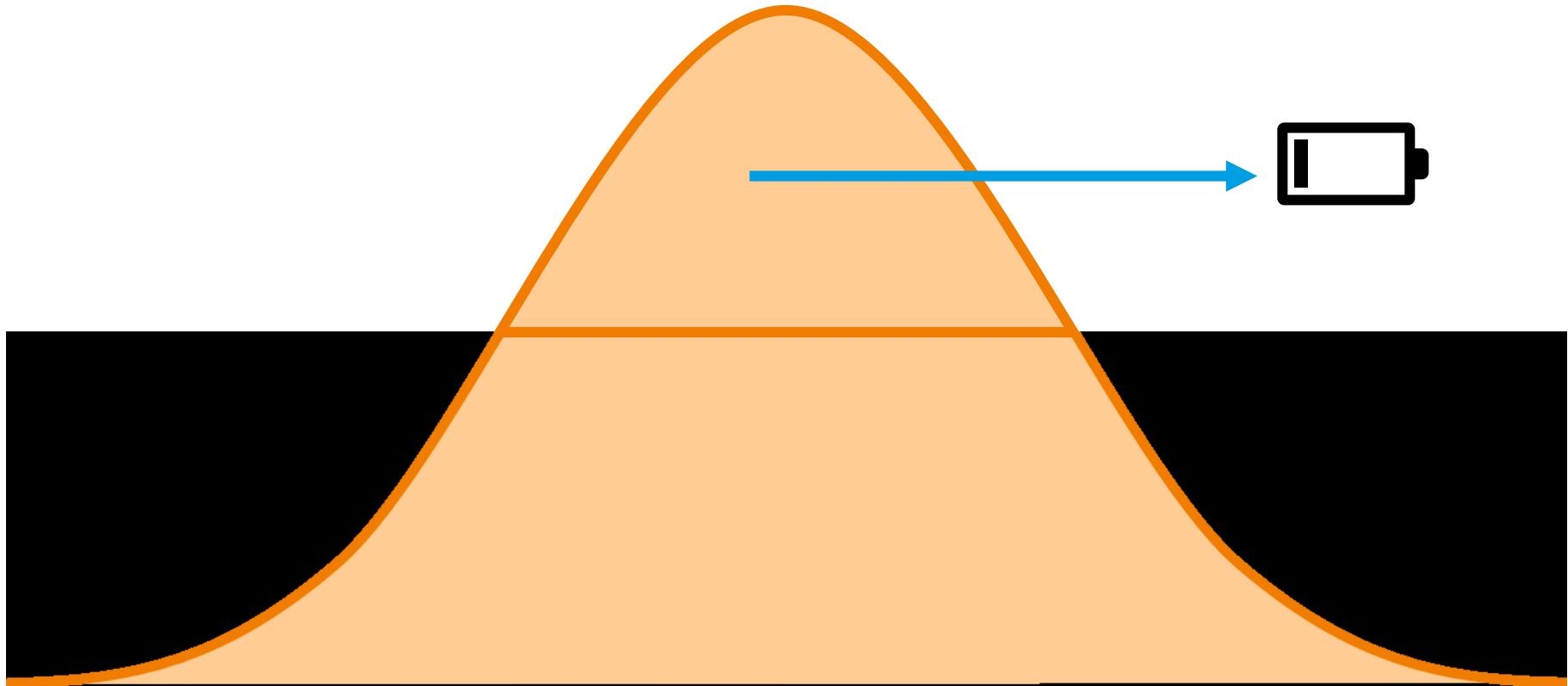
Meer zonneparken op hetzelfde net



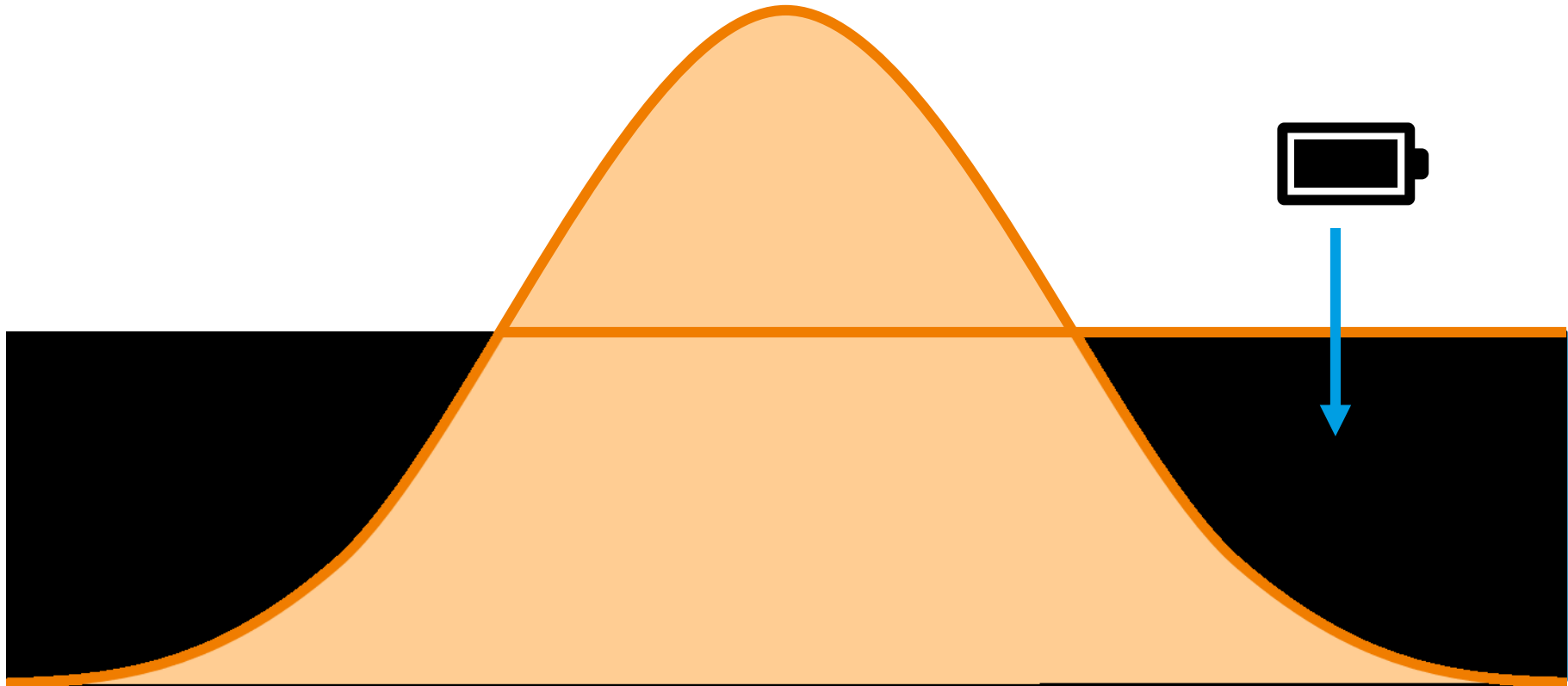
Meer zonneparken op hetzelfde net



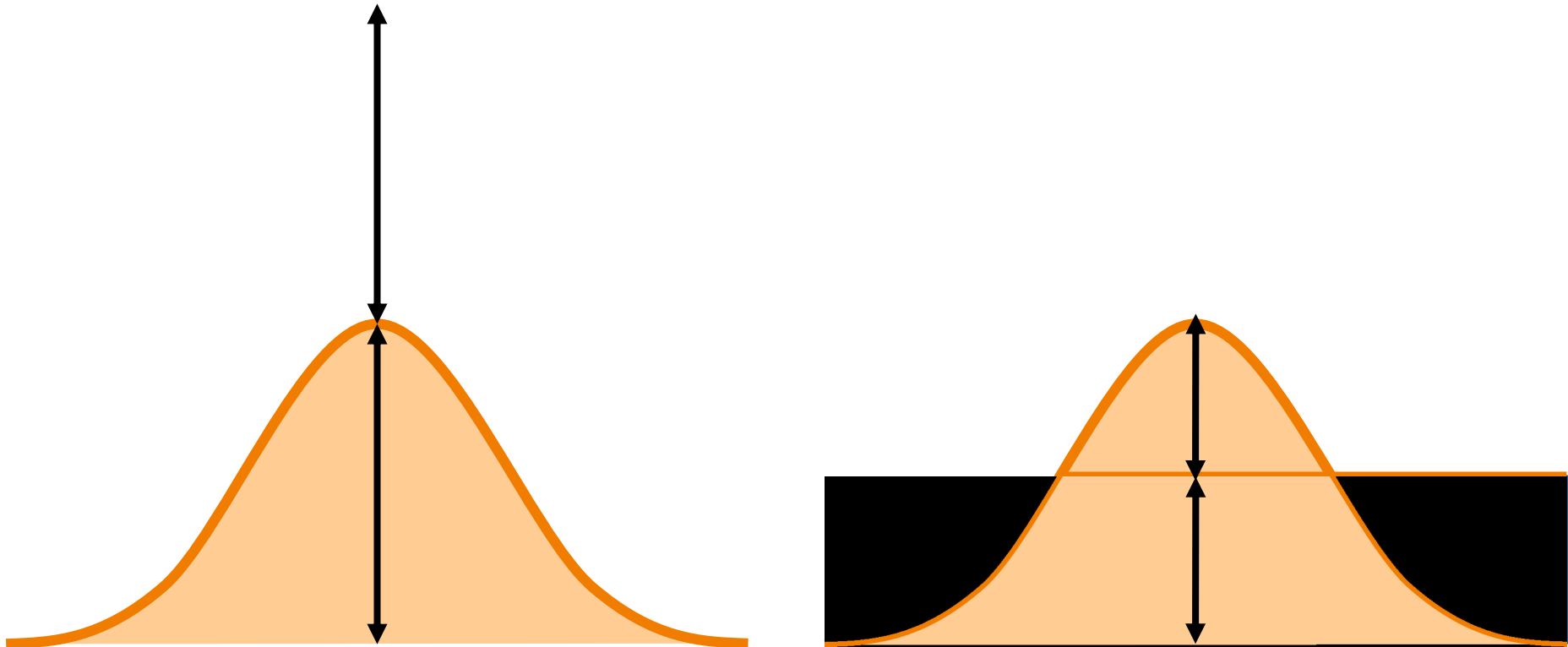
Meer zonneparken op hetzelfde net



Meer zonneparken op hetzelfde net



Meer zonneparken op hetzelfde net



Wie is verantwoordelijk?

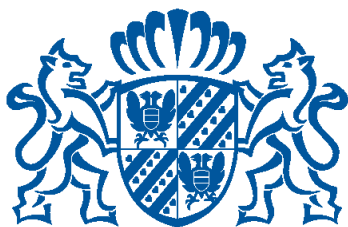


ENEXIS

ENERGIE IN GOEDE BANEN



provincie **Drenthe**



provincie
groningen

Energy
Storage NL

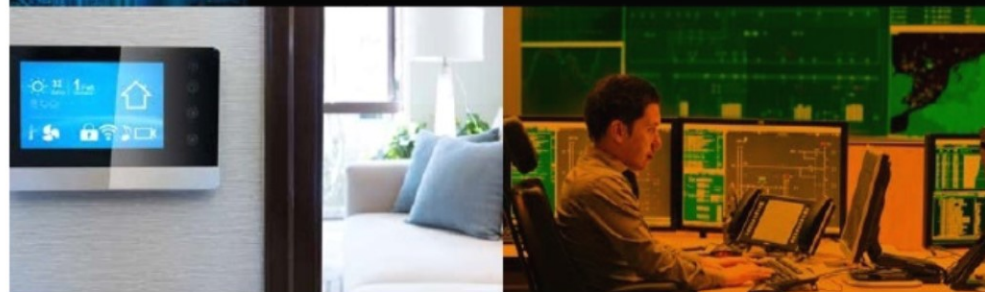


**POWERED
BY DUTCH
TECHNOLOGY**



WERKPAARDEN VOOR DE ENERGIETRANSITIE

Nationaal Actieplan Energieopslag en Conversie 2019



Ruimte voor groei





Stefan Olsthoorn

- Stefan.Olsthoorn@fme.nl
- 06-27344982
- www.energystoragenl.nl