

CA PPM Clarity User Group

Malmö, January 19, 2017

Harris Utne

Statnett

Agenda

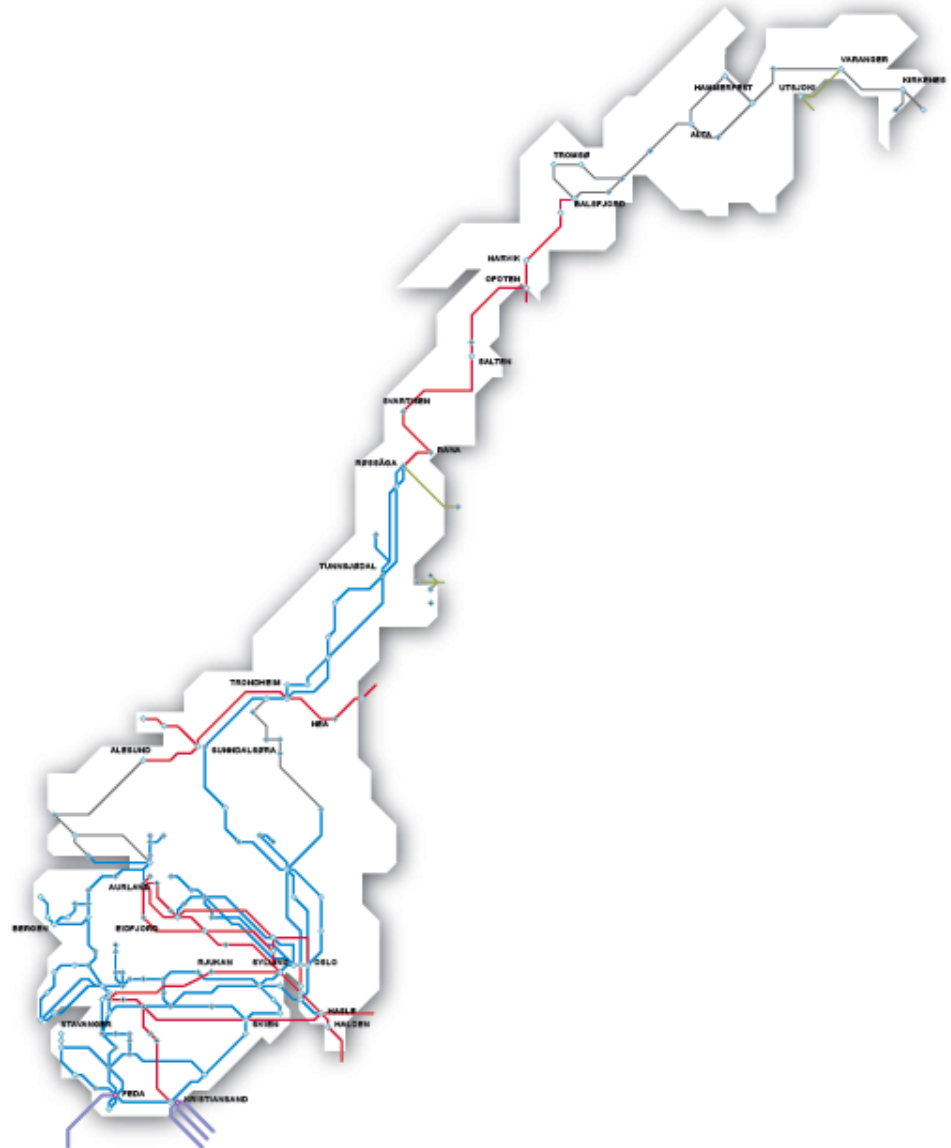
About Statnett

How we use CA PPP Clarity

Experience sharing

This is Statnett

- Statnett is the Transmission System Operator in the Norwegian energy system
- Statnett operates and owns about 11 000 km of lines and cables and approximately 150 transformer stations throughout Norway
- Operations are monitored 24/7/365 from one national control centre and two regional control centres.
- Statnett is also responsible for interconnectors to Sweden, Denmark and the Netherlands



Our main objectives

- To ensure a stable and secure supply of electricity by coordinating production and consumption
- To ensure long-term quality by developing the Norwegian main grid
- To offer equal access to the main grid to all market players
- To ensure accessible transmission routes by means of good maintenance practices

Our strategy



Security of supply

Maintain security of supply through operation, development, monitoring and preparedness



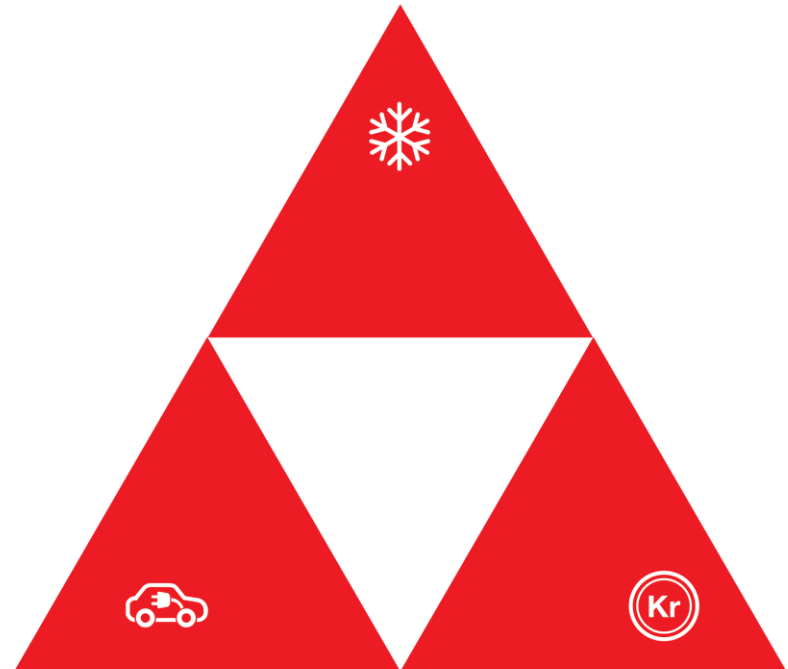
Climate

To facilitate the realisation of Norway's climate objectives



Value creation

To facilitate value creation for our customers and Norwegian society at large



How we use Clarity

- Projects and portfolios
- Configurations and tailormade
 - Categorization
 - Key info about projects
 - Scoring
 - Financials
 - Time series of data (like km construction per year)
 - Resource planning
 - Pilot of "hard allocation" of resources Sep 16 – Jan 17

How we use Clarity – more details

- Projects and portfolios
 - 100 approved projects
 - 175 unapproved projects
- Configurations and tailormade
 - Categorization: Aligned with strategic goals
 - Key info about projects: What will be built (km and components)
 - Scoring: Ranking the projects for prioritization
 - Financials: 8-9 billion NOK per year investments
 - Time series of data: Key metrics to align for organizational capacity
 - Resource planning: Per project, per role (~45 resource roles). Total of about 500 man years
 - Pilot of "hard allocation" of resources Sep 16 – Jan 17

Categorization and scoring

Prosjektkategorisering

Strategisk mål

Forsyningssikkerhet

Reinvestering eller kapasitetsøkning

Kapasitetsøkning

Kategori

Akutt forsyningssikkerhet

Kritikalitet (c)

2

Geografisk plassering.

Nord

Mellomlandsforbindelse

Konsesjon

Status konsesjon

Save

Save And

Prosjekt og score

Prioritet (r)

0

Score

1 050

Gruppering/manuell overstyring

Gruppe

E5

Manuell overstyring

Gruppeprioritet

7

Kommentar manuell overstyring

Basisscore

1 000

Scoringmodell

I. Viktighet for n-1

relevant for n-1

IV. Samfunnsøkonomisk nåverdi delt på styringsmål

nåverdi / investeringskostnad < 0

Påkrevd kapasitetsøkning (MW)

Ingen til 100 MW påkrevd kapasitetsøkning

V. Ny fornybar produksjon (MW)

0 til 40 MW

III. Tidskritikalitet

forsinkelse < 1 år vil sanns. ikke føre til br. på forskr. mynd.h. pål. neg. media

B2 - Rangering

(1-99)

tilleggsinformasjon

II.b Påkrevd kapasitetsøkning (MW)

V.b Kapasitet ny fornybar produksjon (MW)

Avhengighet

More details about the projects

Finansielle nøkkeltall	
Forventet investeringsnivå	<input type="text"/>
Kostnadsramme	<input type="text"/>
Planned Operating Cost	4 251 405 581,90
Planned Cost	4 251 405 581,90
Forventet NPV	<input type="text"/>
(Ikke gyldig for reinvesteringsprosjekter)	
Prisnivå årstall FI	2016
Prisnivå årstall ramme	2016
Delaktivering	<input checked="" type="checkbox"/>
Gjeldende kostnadsintervall	
P30	<input type="text" value="3 200"/>
P70	<input type="text" value="4 800"/>
Årstall P30 - P70	<input type="text"/>
Kommunisert kostnadsintervall min	<input type="text" value="4 300"/>
Kommunisert kostnadsintervall max	<input type="text" value="4 800"/>
Årstall intervall	<input type="text"/>
Forventet investeringskostnad og Kostnadsintervall v / BP0 Eks prisstigning og byggelånsrente	
P30 BP0	<input type="text"/>

Stasjon	
Antall nye stasjoner	<input type="text" value="1"/>
Antall stasjoner spenningsoppgradering	<input type="text"/>
Antall stasjoner utvidelse	<input type="text" value="1"/>
Antall nye felt	<input type="text" value="21"/>
Antall felt ombygging pr. år	<input type="text"/>
Antall omformerleveranser	<input type="text"/>
Antall SVC-leveranser	<input type="text" value="1"/>
Antall trafoleveranser	<input type="text" value="2"/>
Ledning / Kabel	
Ny ledning ny trasé (km)	<input type="text" value="213"/>
Ny ledning eksisterende trasé (km)	<input type="text"/>
Vanskelig adgang (km)	<input type="text" value="140"/>
Riving ledning (km)	<input type="text" value="9"/>
DC-kabel (km)	<input type="text"/>

Improved Resource Management in Statnett (ongoing project)

Why?

1. Need of resource planning on group level
2. Needed to make a realistic project plan (portfolio) – to balance demand and capacity
3. Resource owner should be able to see demand and plan resources

Process already in place:

1. Resource demand planned by the projects
2. Resource demand verified by resource owner/manager
3. Resource demand in the projects to be adjusted

Pilot ongoing right now:

1. Testing Clarity for individual allocation (named persons) to projects (hard allocation)

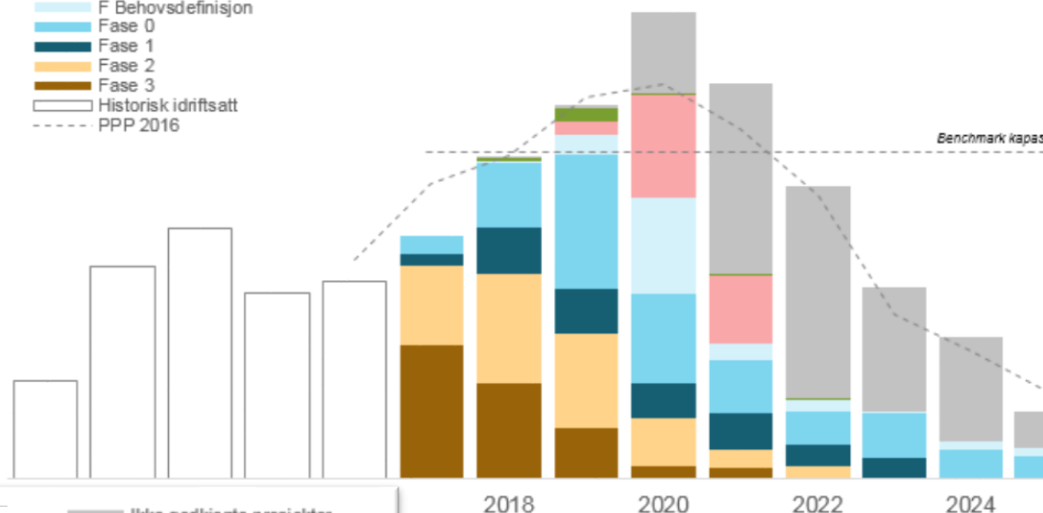
Examples data/illustrations
(not actual data). Chart axis
partly removed.

ombygde felt periodisert*
t per år

Ikke-godkjente prosjekter
BPO 2017 - behovseier kapasitet
BPO 2017 - behovseier reinvestering
F Behovsdefinisjon
Fase 0
Fase 1
Fase 2
Fase 3
Historisk idriftsatt
PPP 2016

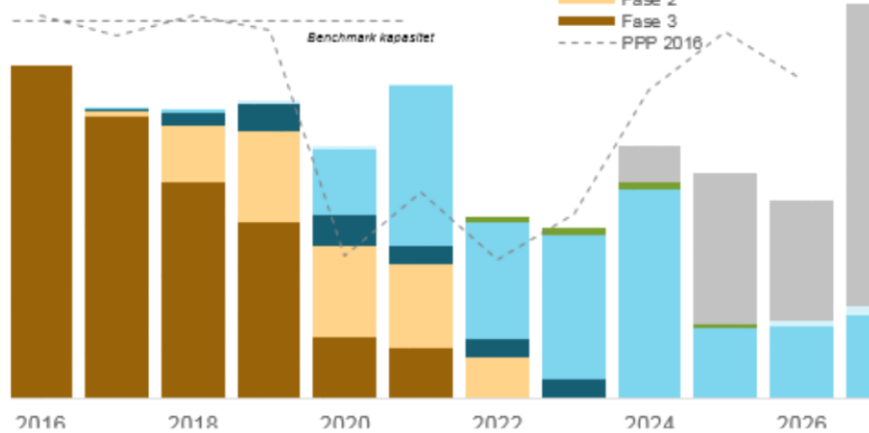
Foreløpig

Activity indicator per year
- Example 1



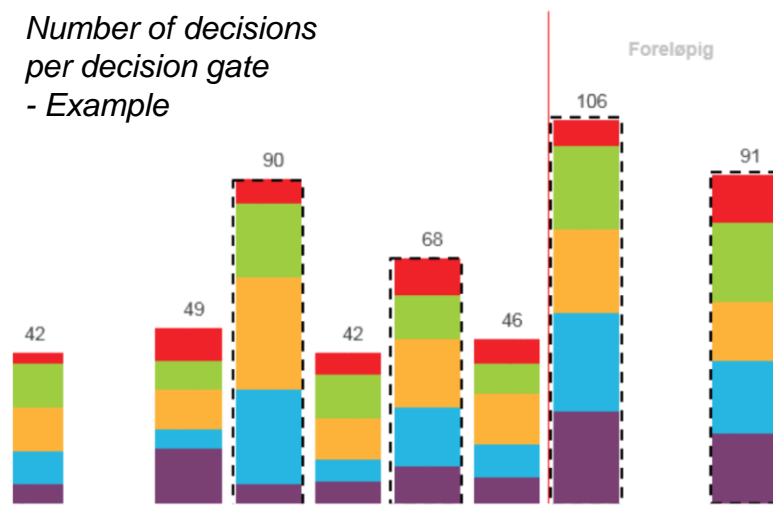
Activity indicator per year
- Example 2

Ikke-godkjente prosjekter
BPO 2017 - behovseier kapasitet
BPO 2017 - behovseier reinvest
F Behovsdefinisjon
Fase 0
Fase 1
Fase 2
Fase 3
PPP 2016



Number of decisions
per decision gate
- Example

Foreløpig



Points of possible improvements

1. Import of data – very difficult today
2. Too many steps and "clicks" for updates
3. Slow when saving
4. Use pivot data logic – project list with data should be easy drag and drop for what to include in table and filtering

Questions?