

European Spallation Source and the Danish commitment

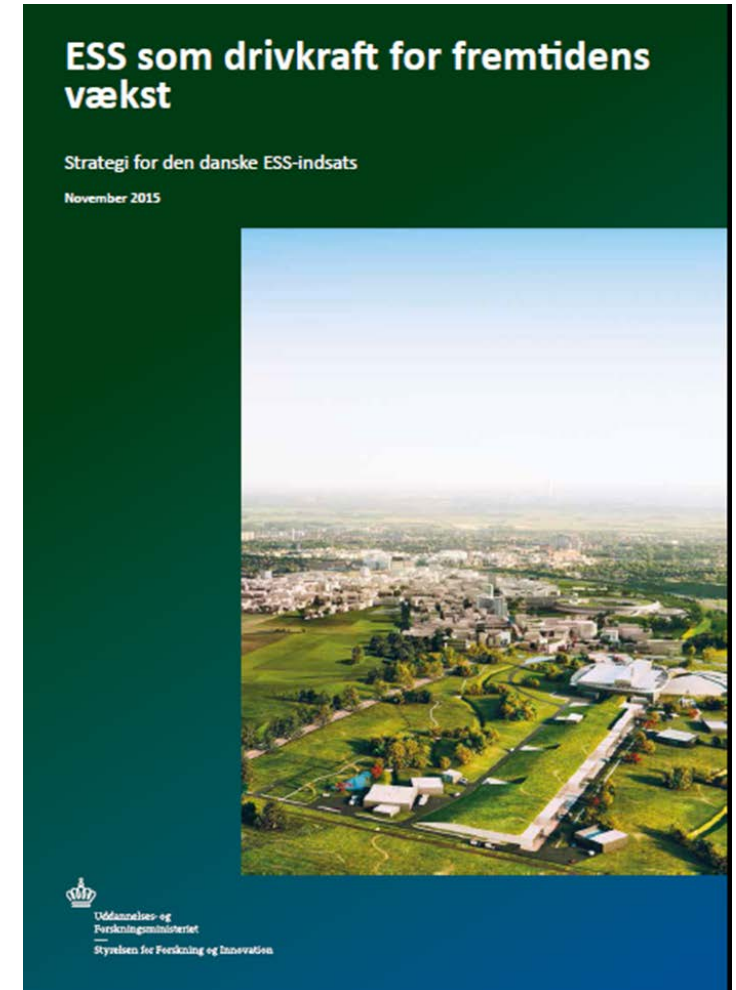
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The Danish ESS- strategy supports Denmark in ensuring that the potential with ESS is obtained

ESS is biggest Danish research investment in modern time. That requires lasting commitment in order to gain the highest return on investment.

The Danish ESS- strategy was published in 2015 and is characterised by three things:

1. That we have a strategy – is not common in other countries.
2. The strategy is “holistic” – focus on all topics which effects effects of ESS
3. The strategy is a partnership – between UFM, universities, business and other relevant partners



ESS- strategy's vision, aim and focus areas

Vision:

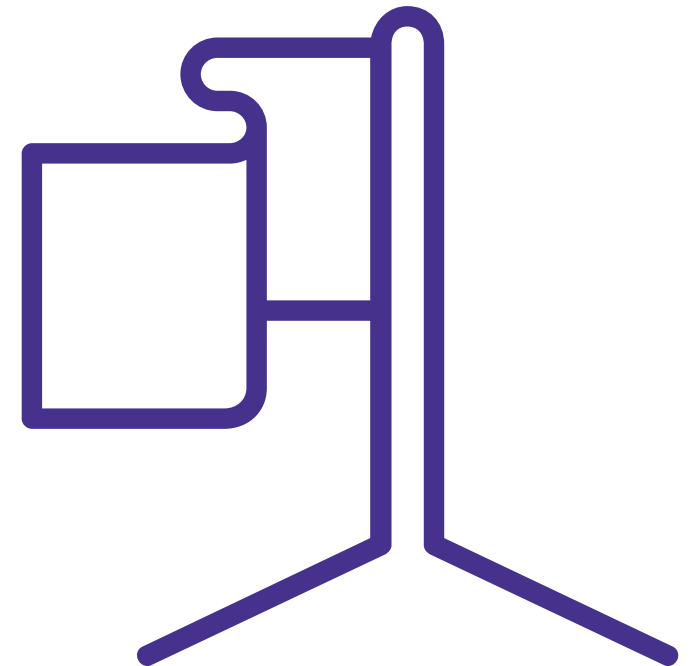
Denmark shall become one of the leading centers for development and use of advanced materials

3 focus areas

1. Leading Research environments
2. World class innovation system
3. Anchoring ESS and MAX IV in Denmark and the Øresundregion

10 benchmarks

The strategy set up clear benchmarks for future actions, and identifies specific activities which could contribute to embrace the possibilities that ESS will bring.



Benchmarks (goals) in the Strategy

	Area	Goals for 2025
Leading Research environments	1. Capacity building	Three times as many neutron users (90 → 250/300)
	2. Bridge building between ESS and Danish science	Close collaboration between ESS and the DK- scientist: <ul style="list-style-type: none"> - Shared positions (and education of ESS PhD's) - In-kind contribution in operation phase
	3. Lighthouses	3- 5 internationally recognized lighthouses in relation to ESS
World class innovation system	4. Efficient access for industry	Industrial User Office supporting industrial access
	5. Industry relevant knowledge building	Lighthouses established in cooperation with industry
	6. Industry portals	Industry portals helps DK- companies to solve material related problems
	7. High- tech suppliers to ESS	Danish suppliers generates a turn- over equalling the DK contribution to ESS
Anchoring ESS in Denmark	8. Labour market for experts	ESS- employees can live/work on both sides of Øresund 15 % of the employees at ESS is based in Denmark
	9. Attracting companies	DK known as a leading centre for material/life science 3- 4 new international “material companies” attracted to Denmark
	10. University cooperation	Strategic cooperation between the regional universities

And what has happened since then...?

	Name	Activity	Resources responsible partner
2015-2016	Scientific memberships of ILL		35 mill. DKK; SFU
	Nordisk Neutron program	Nordic research Scholl and ph.d.- scholarships	25- 30 mill. DKK; SFU
	Bigscience.dk	Renewal of contract with Bigscience.dk	9 mill. DKK; SIU
	Industry portal	LINX, supporting industrial use of ESS/MAX IV	78 mill. DKK; DIF
	Contract with Technological Institute	Support industrial use of ESS/MAX IV	11 mill. DKK; SIU
	Interreg- program	Regional program focusing on capacity building	140 mill. DKK; RH
	Change of emigration Law	ESS- employees from 3. countries can settle in DK	UFM
2017-2018	MoU with ESS	Cooperation agreement between ESS, universities SFU	ESS, DK- Uni and SFU
	Analyzes of education activities	“neutron/synchrotron courses” on DK- universities	Danscatt/SFU
	Analyzes of access to facilities	The future need for access to “scattering- facilities”	Danscatt//SFU
	Cooperation with ESS DMSC	Two workshops about cooperation oppurtunies	UFM (SFU)
	“DK- instrument scientist’ at ILL	Funding of “DK- instrument scientist’ at ILL	1,5 mill. DKK; SFU
	Cooperation between ESS- EMBL	Analyzes of possible EMBL- presence at ESS/MAX IV	0,25 mill. DKK, NordF
	Renewed memberships of ILL	Funding possibilities is investigated	SFU
	Big Science Business Forum	Conference in Copenhagen 2018	3 mill. DKK; SFU
	Business plan for BigScience.DK	Plan for increased industrial return at ESS	Bigscience.dk

Current status – How far have we come ?

	Area	Goals for 2025		Status for 2018
Leading Research environments	1. Capacity building	Three times as many neutron users (90 → 250/300) Half of capacity building in “new areas”	✓	User community increased by approx. 25 pct.
	2. Bridge building between ESS and Danish science	Close collaboration between ESS and the DK- scientist: - Shared positions (Education of ESS PhD’s) - In-kind contribution in operation phase	(÷)	Few shared position or concrete cooperation's between ESS and Danish researchers, but... MoU between ESS, DK Universities
	3. Lighthouses	3- 5 internationally recognized lighthouses	(✓)	On track! First lighthouse was funded in 2018
World class innovation system	4. Efficient access for industry	Industrial User Office supporting industrial access	(÷)	Early discussions with ESS
	5. Industry relevant knowledge building	Lighthouses established in cooperation with industry	✓	On track! Activities integrated into the lighthouses and many new industrial users
	6. Industry portals	Industry portals helps DK- companies use ESS/MAX IV	✓	On track! LINX established TI has received funding
	7. High- tech suppliers to ESS	Danish suppliers generates a turn- over equalling the DK ESS- contribution	(÷)	Few direct orders but... “BigScience.dk” have developed business plan
Anchoring ESS in Denmark	8. Labour market for experts	ESS- employees can live/work on both sides of Øresund 15 % of the employees at ESS is based in Denmark	(÷)	Few ESS- employees settled in Denmark, but... Immigration law changed/HR- cooperation
	9. Attracting companies	DK known as a leading centre for material/life science 3- 4 new international “material companies” moved to DK	(✓)	Progress: Invest in Denmark and Copenhagen Capacity draft Action plan
	10. University cooperation	Strategic cooperation between the regional universities	(✓)	On track! Interreg- program, Nordic program

Focus points for the future work

Despite the huge progress that has been made on most areas of the strategy. There is a number of areas that will special attention in the coming years:

1. **Funding for the last lighthouses.** Pending political priorities in the coming years.
2. **Bridge-building between ESS and DK- researchers:** Shared positions, in-kind contribution in operation phase and DMSC.
3. **Spreading of the user community to new research areas** - life science, geo science, art an humanities.
4. **Establishing an ESS industrial user office** – in cooperation with the regional actors.
5. **Danish “industry- contracts” in the operation phase.**

