

Aabenraa  
Kommune



# Data Centre Strategy 2022

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‘Aabenraa Municipality may evolve into one of the preferred European hubs where the data centre industry has the best development potential - for the benefit of citizens, businesses and the environment. We and the companies must show willingness to grow and seize the opportunities created by the Data Centre Strategy’.

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THOMAS ANDRESEN,  
MAYOR, AABENRAA MUNICIPALITY

## MORE JOBS AND MORE PEOPLE SETTLING IN AABENRAA MUNICIPALITY AS A RESULT OF THE DATA CENTRES.

In order to achieve our overall goal, the Data Centre Strategy 2022 sets up six objectives with associated action plans which focus the efforts by Aabenraa Municipality, as follows:

- 1 To attract more data centres
- 2 To attract and develop downstream industry for the data centres
- 3 To increase the amount of sustainable energy and utilise surplus heat from the data centres
- 4 To attract and develop education programmes for the data centre industry
- 5 To attract a resident labour force for the data centre industry
- 6 To create collaborations on digitalisation through the data centres' Community Outreach projects

# GOAL AND OBJECTIVES IN THE DATA CENTRE STRATEGY

**Our Data Centre Strategy 2022 has one overall goal: ‘More jobs and more people settling in Aabenraa Municipality as a result of the data centres’.**

This overall goal is divided into six objectives which must be pursued simultaneously. Each objective is associated with a number of actions which combined will focus our efforts leading up to 2022.

## OBJECTIVE 1 ATTRACTING MORE DATA CENTRES TO AABENRAA MUNICIPALITY

Our analyses show that if more data centres were to be established in Aabenraa Municipality we have optimal conditions for attracting downstream industries such as subcontractors and service providers in connection with the construction and operation of data centres. Thus, the objective is as follows:

**‘In 2022, Aabenraa Municipality will be home to two operational data centres. Two more data centres are in the planning stage’.**

If we are to achieve this objective, we must work to achieve additional reliable power supply, fast data connections, business areas covered by district plans and further professionalisation of business services and marketing. Data Centre Strategy 2022 sets forth a number of actions which will achieve just that.

## OBJECTIVE 2 ATTRACTING AND DEVELOPING DOWNSTREAM INDUSTRIES IN AABENRAA MUNICIPALITY

While the first data centre is under construction, and while we are working to attract more data centres, we will simultaneously launch initiatives that will attract and develop downstream industries. Thus, the objective is as follows:

**‘Leading up to 2022, Aabenraa Municipality will create a breeding ground that will attract and develop downstream industries’.**

We will do this by means of numerous actions within three types of downstream industries:

1. Contractors, subcontractors and service providers who are engaged in construction and operation of data centres

2. Strengths in the local business community within transport/logistics and circular economy

3. Technological development, including research and development projects

## OBJECTIVE 3 PRODUCTION OF SUSTAINABLE ENERGY AND UTILISATION OF SURPLUS HEAT, THEREBY CREATING ADDITIONAL DOWNSTREAM INDUSTRIES IN SOUTHERN JUTLAND

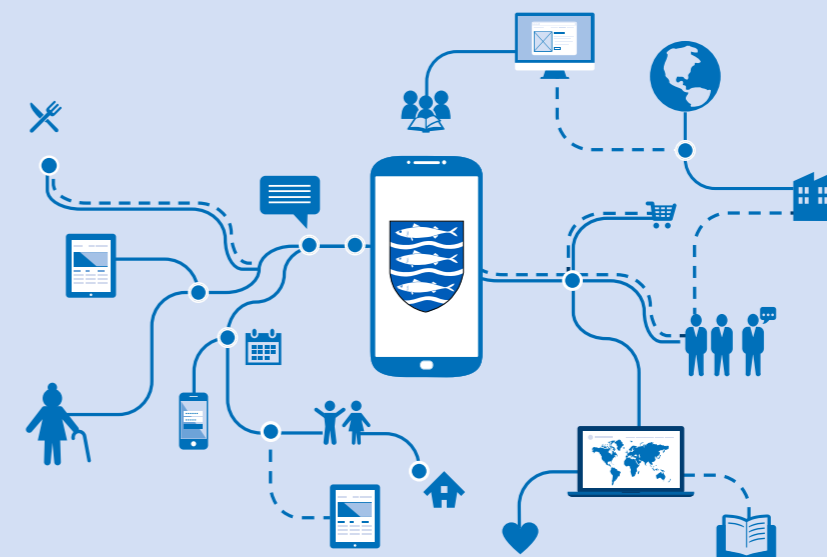
It is the ambition of Aabenraa Municipality to utilise surplus heat from the data centres for district heating and possibly alternative uses that have socio-economic benefits and will fulfil the UN climate goals. At the same time, the utilisation of the surplus heat could create additional downstream industries based on research and development. Thus, the objective is as follows:

**‘Aabenraa Municipality works for both production of sustainable energy and for development and implementation of district heating solutions based on surplus heat, thus creating downstream industries in Southern Jutland that will benefit Danish exports’.**

Data Centre Strategy 2022 comprises a number of actions that will promote the necessary national framework for additional production of sustainable energy and utilisation of surplus heat, that will create the right regional collaboration and that will explore alternative utilisation of surplus heat. Combined, these types of downstream industries can contribute to more jobs and more people settling in Aabenraa.

## OBJECTIVE 4 ATTRACTING VOCATIONAL EDUCATION PROGRAMMES TO AABENRAA MUNICIPALITY

It is a must for construction and operation of very large data centres that no bottlenecks are encountered in the recruitment of employees. This is best achieved if the education of the labour force to a large extent takes place locally and has a clear objective. In turn, this will contribute to more jobs and more people settling in Aabenraa. Thus, the objective is as follows:



**‘Aabenraa Municipality wishes to attract vocational education programmes that reflect the needs of data centres and downstream industries’.**

Data Centre Strategy 2022 sets up actions which will attract and enhance vocational programmes locally, e.g. education and further education of electricians, HVAC (Heating, Ventilation and Air Conditioning) technicians, field engineers and automation technicians.

## OBJECTIVE 5 ENSURING THAT PEOPLE WORKING IN THE DATA CENTRE INDUSTRY SETTLE IN AABENRAA MUNICIPALITY

Already by construction start, employees associated with the construction may choose to settle down in Aabenraa Municipality, where construction and operation of data centres will create steady jobs for many years. Thus, the objective is as follows:

**‘Aabenraa Municipality wishes to attract and retain managers, technicians and construction workers who will accompany the construction and operation of the data centres’.**

This requires strong initiatives targeted at settlement, and Data Centre Strategy 2022 is thus establishing a number of actions to achieve this objective.

## OBJECTIVE 6 COLLABORATING ON DIGITALISATION THROUGH THE DATA CENTRES’ COMMUNITY OUTREACH PROJECTS

It is anticipated that the global IT companies behind the data centres will want to play an active role locally, e.g. in the so-called Community Outreach projects. Aabenraa Municipality wishes to target such collaboration. Thus, the objective is as follows:

**‘Aabenraa Municipality wishes to establish a long-term development collaboration with the IT companies behind the data centres within digitalisation and education as well as welfare technology for the benefit of citizens and businesses’.**

To achieve this objective, Data Centre Strategy 2022 establishes a number of actions that will inspire to close collaboration with the data centre companies in areas where Aabenraa Municipality is investing actively and enjoys good competences.

## The Data Centre Strategy is an important element in Aabenraa Municipality’s Growth Strategy and Growth Plan

Data Centre Strategy 2022 derives from Healthy Growth, Aabenraa Municipality’s Growth Strategy 2018-2030. It generally contributes to the pursuit of the vision of Aabenraa Municipality as a world-renowned digital community, and it is especially important for initiatives related to the focal point ‘Digital companies as growth catalysts’.

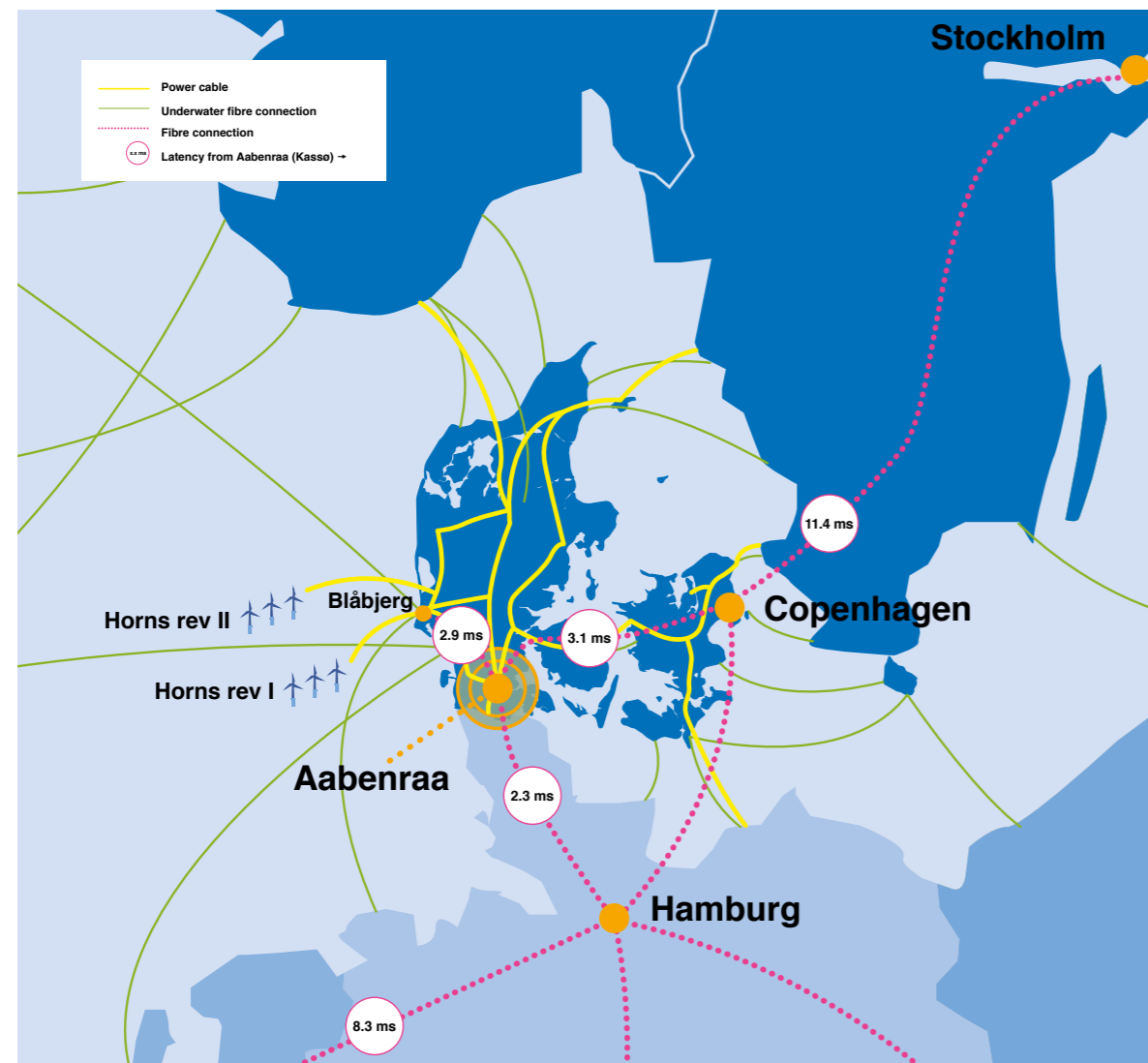
## DATA CENTRES IN BRIEF

Companies, organisations and authorities store their own data as well as the customers', users' or citizens' data either on their own servers, with an external storage space provider or in 'the cloud'.

Data storage with external providers and in the cloud happens physically at small or large data centres. Apple's and Google's hyperscale data centres consist of a number of data centre halls where each data centre hall is the size of several football fields and houses many thousands of servers that store data.

Worldwide, data usage is increasing dramatically as billions of people and businesses globally share and

store photos and videos, stream series and TV, play games, check the route on Google Maps or sell and buy merchandise on the internet. All these daily transactions increase the total amount of data 'in the cloud'. Therefore, there is an increasing need for data centres which are the cornerstone of the global infrastructure, and which consumers and businesses expect to operate quickly and reliably.



## FOUR GOOD REASONS WHY DATA CENTRES PREFER AABENRAA MUNICIPALITY

### FIRST

Aabenraa Municipality is home to one of the biggest 'power crossroads' in Northern Europe. In Kasø, where Apple and Google's data centre sites are located, much of Scandinavia's sustainable power in the form of north-/south-bound high-voltage lines (400 KV) is crossing east-/westbound high-voltage power lines (150 KV). In addition, there are obvious connection options (60 KV) at many locations in Aabenraa Municipality, e.g. in Padborg.

### SECOND

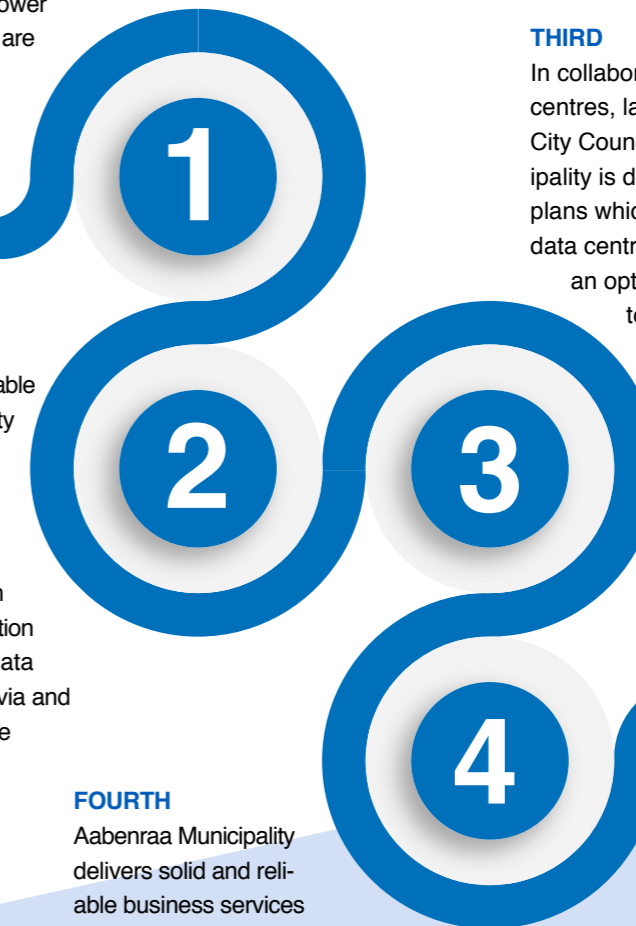
Aabenraa Municipality has available capacity of reliable, high-capacity fibre connections and can e.g. offer four separate connections to the same building site, thus preventing interruption in case of cable breakdowns. Starting in 2020, the new Mermaid Connection will guarantee additional fast data connections between Scandinavia and the United States that will secure the fastest possible connection.

### FOURTH

Aabenraa Municipality delivers solid and reliable business services that are confidential and fully supported by the City Council. For global, listed companies such as Apple and Google, confidentiality is crucial when deciding upon their billion-dollar investments without their competitors finding out.

### THIRD

In collaboration with the data centres, landowners and the City Council, Aabenraa Municipality is developing district plans which will enable large data centre constructions with an optimal location close to abundant, reliable power and with optimal fibre connections in all directions.



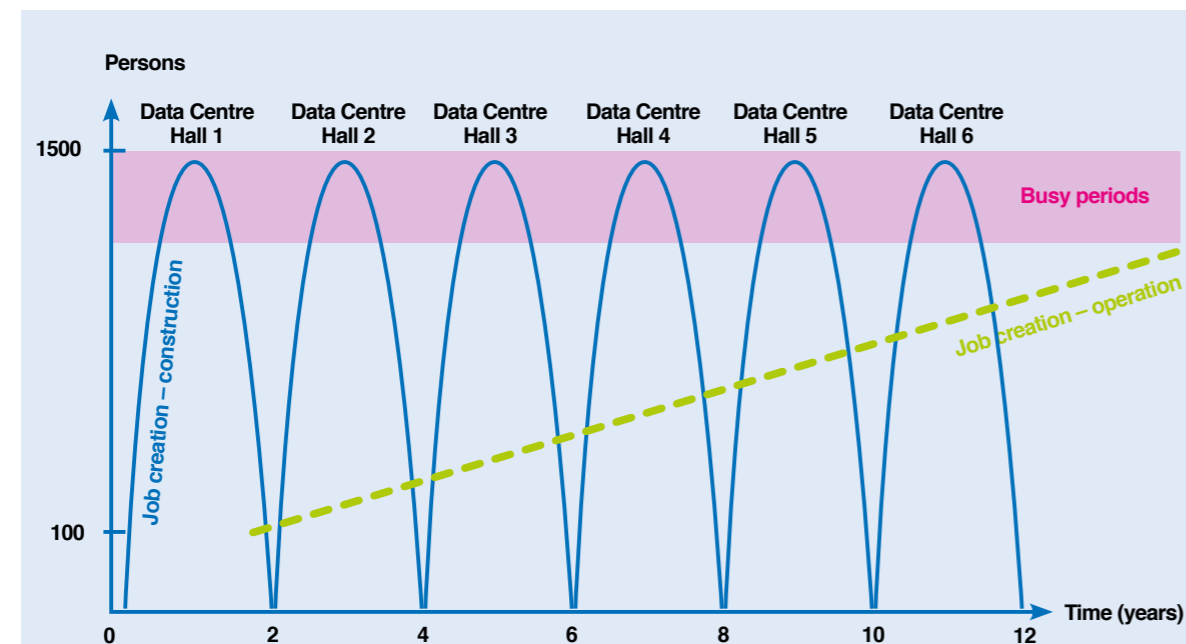
# UNDERSTAND THE CONSTRUCTION AND OPERATION OF THE DATA CENTRES IN AABENRAA MUNICIPALITY

It is expected that the construction of the data centres in Aabenraa Municipality will happen in stages, with a number of data centre halls being built over a number of years:

First, data centre hall number one and the administration and engineering buildings for the data centre will be constructed. When these buildings have been completed and all the servers for data storage are in place, the data centre will be commissioned. This typically happens two to three years after construction start. At that time, the

construction of data centre hall number two has probably already started, followed by data centre hall number three, four etc. Both Apple and Google have purchased large data centre sites in Aabenraa Municipality, thus making possible that a larger number of data centre halls will be built continually over the next 10-25 years.

## TYPICAL JOB CREATION OVER TIME FOR THE HYPERSCALE DATA CENTRE



**Legend:**

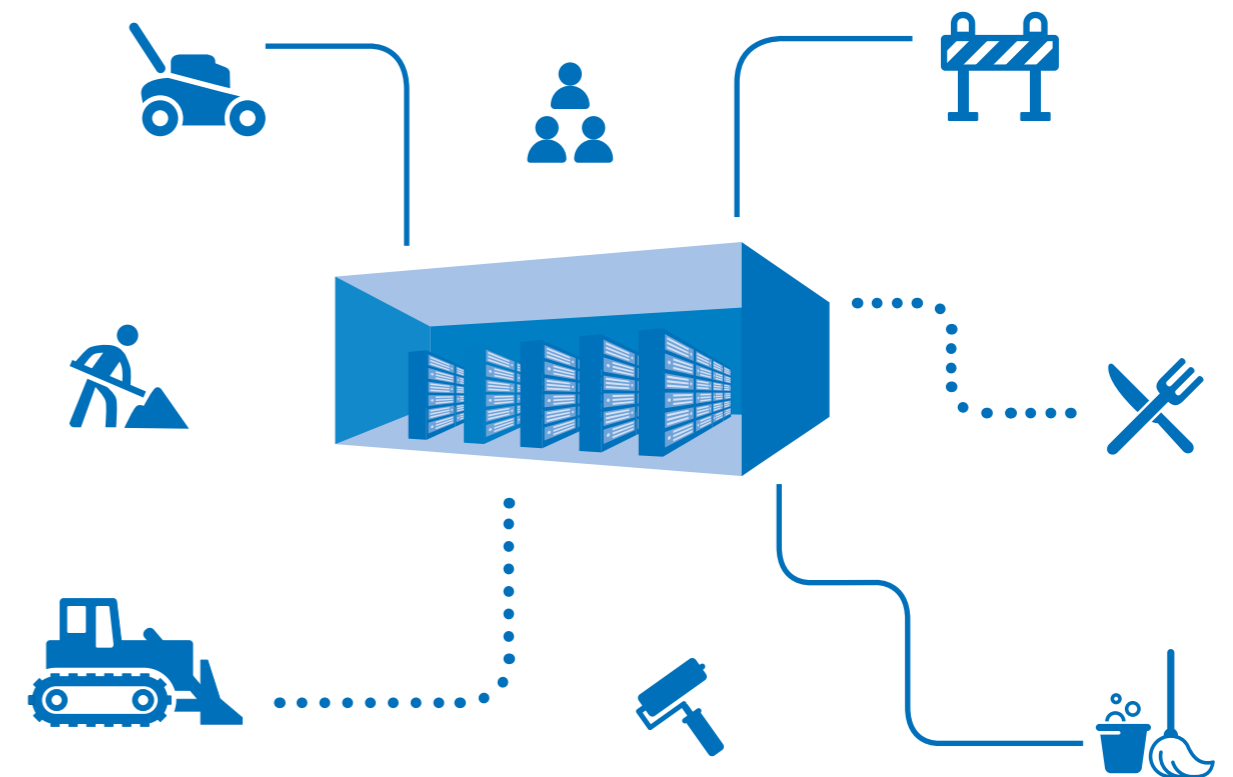
- The blue graphs show the estimated number of managers, technicians and construction workers during the construction phase.
- The green line shows the estimated number of managers, technicians and service workers during the operation phase.
- The red field marks the busy periods.

During **the construction phase**, the need for manpower will be considerable at the construction site. The main contractor and a number of subcontractors will need a lot of employees from the construction industry, e.g. structurers, hall fitters, HVAC technicians and craftsmen within power and fibre connections as well as installation of servers. At other data centre construction sites, up to 1500 people have been working during busy periods. In this phase, the local community will no doubt experience an increasing demand for accommodation, meals, shopping, etc.

When **the operation** of the first data centre hall is to be started, so is the recruitment of the approx. 100-150 employees needed to operate a data centre with one or two data centre halls. With respect to educa-

tion, it is primarily employees with an IT background who are needed to ensure operation, i.e. monitoring, maintaining and upgrading the servers. The data centre must be operational 24 hours a day, 365 days a year. In addition to IT people, there will be a need for employees with knowledge of cooling, ventilation, power and fibre connections and likely also automation technicians.

For **the servicing** of the data centre, there will be other jobs which are related to monitoring and maintaining the buildings and the surrounding areas, e.g. gardeners, canteen staff, cleaning and security personnel.



## OBJECTIVE 1

**In 2022, Aabenraa Municipality will be home to two operational data centres. Another two data centres are in the planning stage.**

In the short and medium term, Aabenraa Municipality has the prerequisites necessary for additional data centres to be established. We have several suitable areas close to the necessary reliable power supply and with fast data connections of the same quality as the building sites which Apple and Google have invested in. In the future, Aabenraa Municipality will be able to immediately offer areas that are covered by a district plan to dynamic investors, e.g. through strategic area acquisition.

The actions outlined below shall help ensure that the right framework will also be available in the long term, and that we can offer business services and marketing that actively work to attract and retain more data centres.

Our ambition is to facilitate a rapid expansion of the capacity of sustainable power production and transmission network. Our aim is to ensure that Southern Jutland and Denmark reap the environmental benefits of the energy conversion, and at the same time we wish to accommodate future investors' needs for reliable and sustainable power supply.

### **ACTIONS TARGETED AT RELIABLE AND SUSTAINABLE POWER SUPPLY**

- In 2019, the opportunities for increased capacity in the electricity supply grid in Southern Jutland and Aabenraa Municipality will be mapped out by the Secretariat for Strategic Energy Planning in collaboration with the energy company, Energinet.
- In 2019, Aabenraa Municipality will - in collaboration with landowners - launch an initiative concerning dialogue, business services and district plan development targeted at investors in large-scale sustainable

energy production, e.g. solar cell plants, biogas or wind farms.

- Leading up to 2023, a plan for expansion of the capacity of the transmission network in Southern Jutland and Aabenraa Municipality will be prepared by the Secretariat for Strategic Energy Planning aimed at accommodating the companies' needs.

### **ACTIONS TARGETED AT FAST FIBRE CONNECTIONS**

- Aabenraa Municipality will work to ensure that Southern Denmark will remain the market leader within fibre connections by virtue of the smooth processing by authorities of cases concerning maintenance and expansion of the fibre network. This will benefit citizens and companies, including the data centre industry.

### **ACTIONS TARGETED AT BUSINESS AREAS COVERED BY DISTRICT PLAN**

- 2019 will see the preparation of district plans for areas that are suitable for data centres in Padborg. The plans will be translated to English and German.
- In 2019 and 2020, we plan to acquire strategic areas for data centres and/or data centre-related companies.
- In 2020, two additional district plan areas will be prepared for the data centre industry adjacent to existing data centre companies. The plans will be translated to English and German.



**ACTIONS TARGETED AT PROFESSIONALISED BUSINESS SERVICES AND MARKETING TO THE DATA CENTRE INDUSTRY**

**The initial contact to data centre companies**

- Aabenraa Municipality will continue its close, trusting and confidential collaboration with Invest in Denmark, including coordinated outreach initiatives to selected potential investors.
- We will strengthen the Danish investment initiatives with concrete investment proposals, prospects and presentations in English and German in areas where we have something to offer to foreign investors within the data centre industry/downstream industries, sustainable energy production/utilisation of surplus heat and logistics and transport.
- Aabenraa Municipality is working constantly to ensure that its employees have the right business, language and marketing competences.

**Fully confidential, targeted proposals and offers to the data centre companies**

- Throughout the strategy period, Aabenraa Municipality will maintain an offer of business services with a single designated contact person to data centre companies which are seriously considering establishing themselves in the municipality. The contact person will coordinate responses and suggestions to all questions about land, district plans, supply opportunities, partners in the local business community, contact with consultants etc.

**Partnership initiatives among data centre companies and local companies**

- Throughout the entire strategy period, Business Aabenraa will maintain and expand the supplier list of local companies, allowing them to introduce their competences to data centre companies and their main contractors and subcontractors.
- Throughout the entire strategy period, Aabenraa Municipality and Business Aabenraa will continuously monitor the possibilities of events for local companies, allowing them to make their compe-

tences visible as cooperation partners for data centre operators and downstream industries.

**Regulatory processing by authorities of data centre companies**

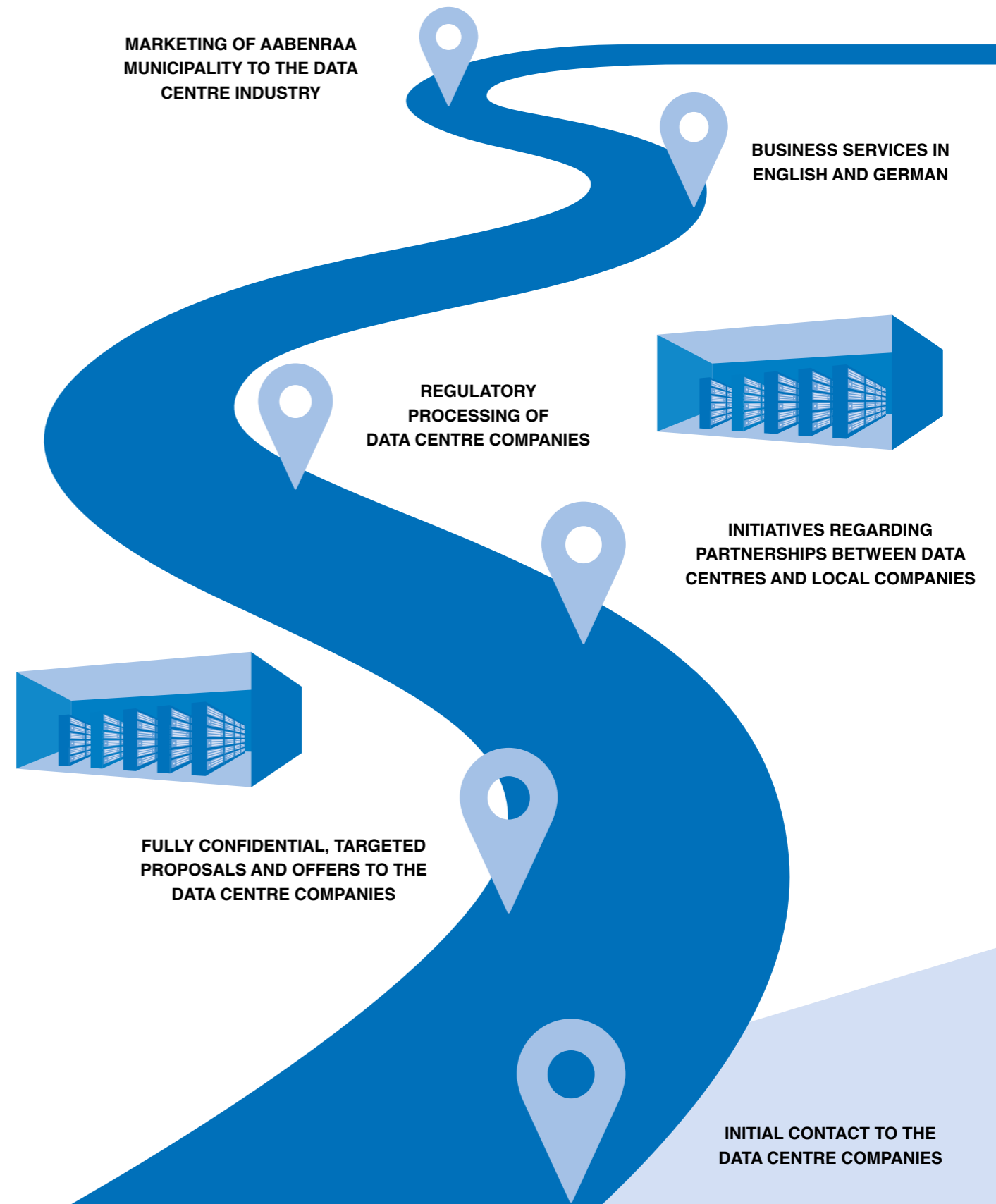
- Throughout the entire strategy period, Aabenraa Municipality will have one project manager in our regulatory department for each major data centre company that establishes itself in Aabenraa Municipality. The project manager will be the contact person and case manager with respect to all regulatory procedures and will draw upon colleagues with relevant specialties.

**Business services in English and German**

- From mid-2019, all district plans relevant to data centres and downstream industries will be available in English and German on [www.aabenraa.dk](http://www.aabenraa.dk)
- From mid-2019, an overview of total regulatory packages with requirements concerning content and timetable will be available in English and German on [www.aabenraa.dk](http://www.aabenraa.dk)

**Marketing of Aabenraa Municipality to the data centre industry**

- In 2019, the English version of the website [aabenraa.dk](http://aabenraa.dk) will be supplemented with data centre and branding videos in English, and the German version will be supplemented with similar material in German.
- In the beginning of 2019, it will be evaluated whether it will be useful for Aabenraa Municipality to participate in the Datacloud Nordic exhibition with own stand in November 2018.
- In 2020, a number of English and German language industry-related media will be invited to Aabenraa, possibly in collaboration with Invest in Denmark.
- The establishment of the data centre industry in Aabenraa Municipality will be exploited in the ongoing branding initiatives in Denmark to attract more citizens and companies.



**MARKETING OF AABENRAA MUNICIPALITY TO THE DATA CENTRE INDUSTRY**

**BUSINESS SERVICES IN ENGLISH AND GERMAN**

**REGULATORY PROCESSING OF DATA CENTRE COMPANIES**

**INITIATIVES REGARDING PARTNERSHIPS BETWEEN DATA CENTRES AND LOCAL COMPANIES**

**FULLY CONFIDENTIAL, TARGETED PROPOSALS AND OFFERS TO THE DATA CENTRE COMPANIES**

**INITIAL CONTACT TO THE DATA CENTRE COMPANIES**

## OBJECTIVE 2

### Leading up to 2022, Aabenraa Municipality will create a breeding ground that will attract and develop downstream industries

If sufficient data centres are built and operated in Aabenraa Municipality, a wide range of downstream industries may emerge around the new digital companies, including existing local companies with jobs from the data centre industry and possibly within research and development. We must bear in mind that the development of downstream industries will most likely develop in waves and ripples, depending on the number of data centres, the technology development, international consumer patterns, etc.

#### ACTIONS TARGETED AT DOWNSTREAM INDUSTRIES BASED UPON CONTRACTORS, SUBCONTRACTORS AND SERVICE PROVIDERS

If a number of data centres are built in Aabenraa Municipality over the next 10-25 years, a number of contractors, subcontractors and service providers will likely consider establishing themselves in Aabenraa or Southern Jutland in order to be able to service the data centre industry in Denmark and Northern Europe. Until that happens, efforts will be made to create collaboration and jobs for local businesses.

- In 2019, the supplier network for companies in Aabenraa Municipality and Southern Jutland will continue and be expanded to ensure jobs for local subcontractors and service providers.
- In 2019 and 2020, further targeted partnership arrangements will be organised for local subcontractors and service providers and foreign companies in the data centre industry.
- During the entire strategy period, assistance is provided with respect to establishment of supplementary hotel and conference activities in Aabenraa Municipality in order to accommodate the expected increased demand, e.g. from the growing data centre industry in Southern Denmark.
- When the hotel and conference capacity has been increased, additional efforts will be made to

attract more conference and trade show activities to Aabenraa Municipality, targeting the data centre industry as well as other industries.

- Aabenraa Municipality will seek to establish collaboration with Invest in Denmark and other relevant actors to attract foreign contractors, subcontractors and service providers if several data centre constructions are started in Aabenraa Municipality.

#### ACTIONS TARGETED AT DOWNSTREAM INDUSTRIES BASED UPON THE STRENGTHS OF THE LOCAL BUSINESS COMMUNITY – TRANSPORT/LOGISTICS AND CIRCULAR ECONOMY

Aabenraa Municipality is already among the leading areas within transport and logistics with a very large number of companies and workers, especially in the Padborg area. Evidently, it would be a good idea initially to promote partnerships with external transport and logistics companies which already provide services to Apple, Facebook and Google, who are presently building data centres in Denmark.

Once in operation, data centres must replace e.g. servers on an ongoing basis. A specialised industry has emerged which offers dedicated and certified waste disposal and recycling services to data centres, offering special standards for safe disassembly, transportation and separation in fragments for recycling. Here, too, there could be opportunities for local companies working within the circular economy.

- In 2019, Business Aabenraa, Padborg Transport Centre and Aabenraa Municipality will initiate an outreach effort toward European transport and logistics companies which specialise in solutions to the data centres in Northern Europe.
- Leading up to 2022, GateDenmark and Aabenraa Municipality will work to ensure that Padborg Transport Centre develops into a recognised 'test bed' for new technologies and systems. The first test run

will be established in 2019 with construction of 5G infrastructures starting in 2020 and establishment of actual 5G application systems at companies or more broadly at the Transport Centre starting in 2021.

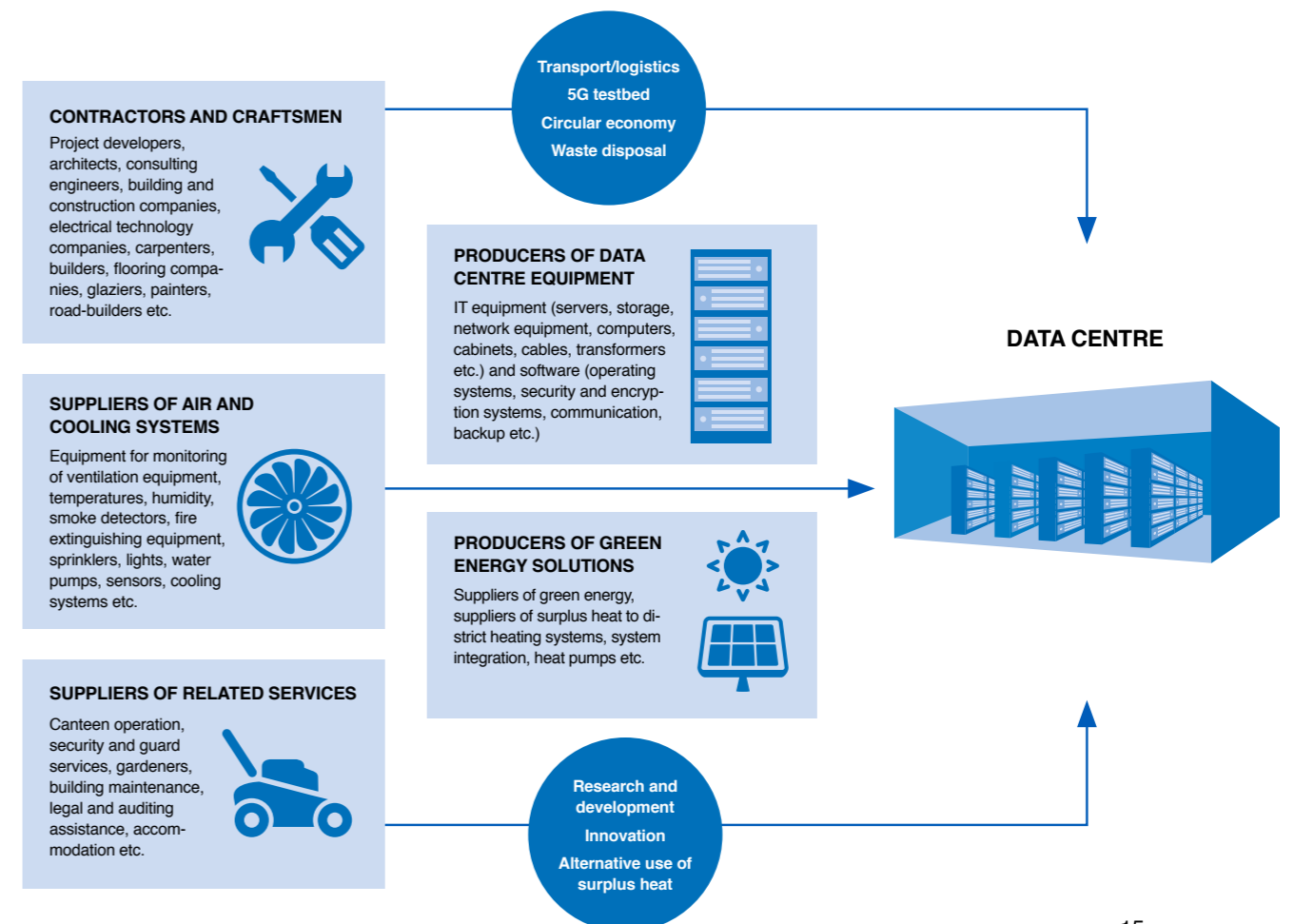
- In 2019, the efforts to facilitate partnerships for foreign service providers and local companies within the field of waste disposal/recycling will continue. Thus, the data centre industry will have an opportunity to choose local service providers when the operating phase is started.
- At the same time, Business Aabenraa and Aabenraa Municipality will offer assistance to local companies that wish to set up activities within waste disposal/recycling of IT equipment in Aabenraa Municipality leading up to 2023.

#### ACTIONS TARGETED AT DOWNSTREAM INDUSTRIES BASED UPON TECHNOLOGICAL DEVELOPMENT, INCLUDING RESEARCH AND DEVELOPMENT PROJECTS

The technological development in the data centre industry happens fast, and the data centres are constantly improved. With a number of data centres in Aabenraa Municipality, technological development- and

research-based downstream industries may emerge, contributing to the data centre infrastructure of the future, e.g. fibre solutions, masts, antennas, power savings, new cooling techniques, improved data handling systems for the data centres, utilisation of surplus heat etc. This would offer opportunities for large companies such as Danfoss and Grundfos, but also for research institutions such as SDU (University of Southern Jutland) and DTU (Technical University of Denmark).

- In the coming years, Aabenraa Municipality will follow the technological development in the data centre industry closely to ensure that through partnerships and business development, we can help local companies become part of a data centre ecosystem.
- In 2019, the possibilities for establishing focused twin city collaboration will be explored in places where it is obviously a good idea to consider Nordic and European data centre cities.
- In 2021, Aabenraa Municipality will arrange innovation weekends with interested partners, with focus on innovation and spin-offs from the data centres in Aabenraa and Denmark.





## OBJECTIVE 3

**Aabenraa Municipality works for both production of sustainable energy and for development and implementation of district heating solutions based on surplus heat, thus creating downstream industries in Southern Jutland that will benefit Danish exports**

The upcoming data centres represent a great potential for utilising surplus heat for district heating. Surplus heat from the cooling of the servers in the data centres can be converted to district heating by means of heat pumps and could in principle supply all district heating customers in the major cities in Southern Jutland (Haderslev, Sønderborg, Tønder and Aabenraa – Rødekro, Padborg and others) as well as Flensburg south of the border.

Popularly speaking, by modifying existing technical solutions, one can reuse the sustainable power supplied to the data centres three times. The first time, when the power is used to cool down the many servers in the data centres. The second time, when the surplus heat is converted to hot water that may be discharged into the district heating network. The third time, if it is reused by building up storage capacity for the heated water, which presently is the most obvious way to store surplus energy.

In this way, the placement of a larger number of data centres in Denmark based on sustainable power will make a significant contribution in achieving global climate goals. In many other countries, data centres are built in a warmer climate and are cooled by generators or power plants driven by fossil fuel to the detriment of the climate and without any reuse of surplus heat.

It is the ambition of Aabenraa Municipality that surplus heat from the data centres shall be utilised for district heating, energy storage and other alternative uses, which will have socio-economic benefits and help reach the UN's climate goals.

At the same time, it is also the ambition of Aabenraa Municipality that the production of sustainable energy shall be expanded nationally and locally in order that the power to the increasing number of data centres also becomes sustainable.

### CHALLENGES FOR THE UTILISATION OF SURPLUS HEAT IN THE LEGISLATION AND THE TAX SYSTEM

However, in order to utilise the large socio-economics and sustainability potential, a number of challenges need to be addressed at national level (legislation, taxes), by cross-border municipal and regional cooperation (district heating solutions) and in cooperation with the data centre industry and downstream industries (technical solutions).

Briefly, at national level, it is a challenge that the production of district heating based on surplus heat is not profitable with the current tax system and current/future legislation. Therefore, it is difficult for existing district heating plants to use this option because they are obliged to choose the cheapest solution according to the Heat Supply Act. In addition, the abolishment of the legal obligation to join and the obligation to remain connected also makes it difficult to create support for long-term investments in a district heating network that may buy surplus heat from the data centres – even though this would clearly be the right solution from a socio-economic and climate point of view.

### ACTIONS TARGETED AT NECESSARY NATIONAL FRAMEWORK CONDITIONS

- In 2019, the Secretariat for Strategic Energy Planning (SEP) and Aabenraa Municipality will invite the Danish Parliament's Energy, Utilities and Climate Committee to Aabenraa and other Danish data centre municipalities for a discussion of the national challenges concerning utilisation of surplus heat.
- Through the Secretariat for Strategic Energy Planning and together with other 'data centre municipalities' and interest organisations, Aabenraa Municipality continuously works to be an active voice in the national debate regarding favourable framework

conditions for the utilisation of surplus heat which would have socio-economic benefits and help achieve the UN's climate goals.

- Through the Secretariat for Strategic Energy Planning and relevant authorities, Aabenraa Municipality works continuously to ensure that the municipalities are given opportunities for strategic development of areas for production of sustainable energy, e.g. large wind farms.

### ACTIONS TARGETED AT REGIONAL COLLABORATION REGARDING UTILISATION OF SURPLUS HEAT FOR DISTRICT HEATING

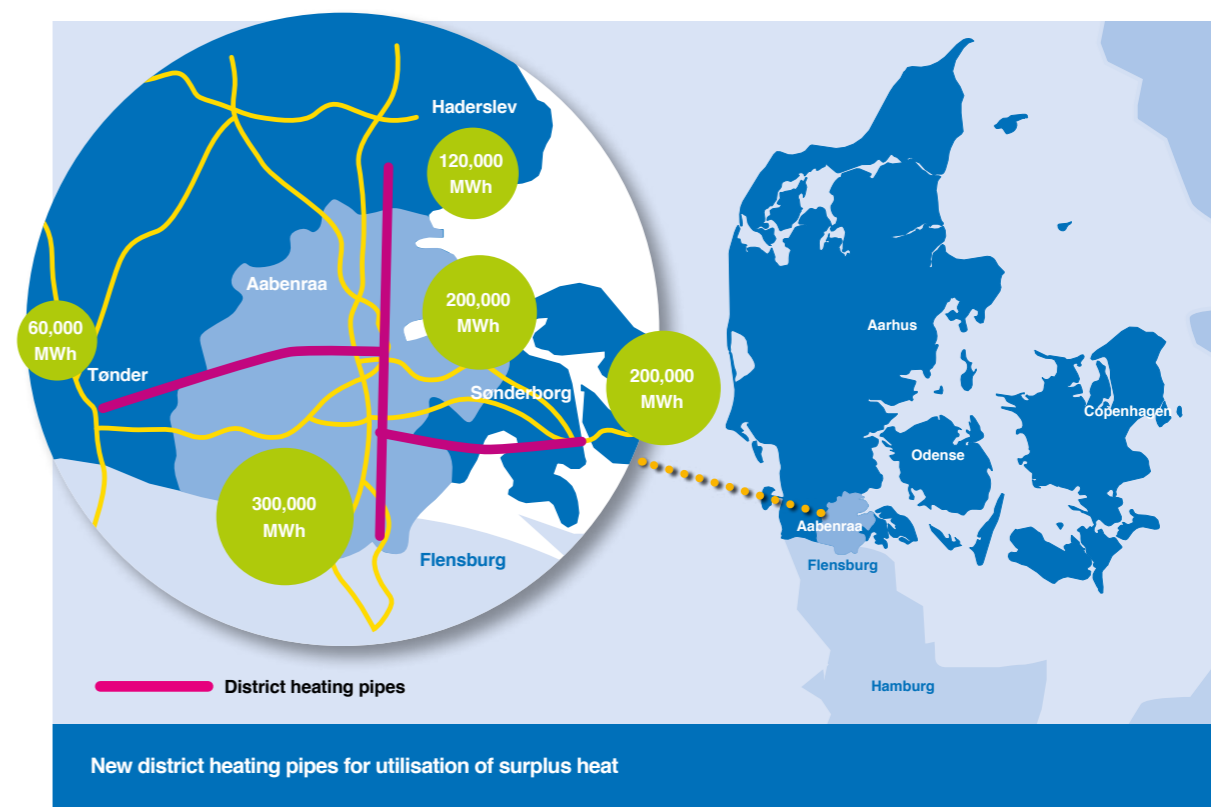
- In 2019, the Secretariat for Strategic Energy Planning in Aabenraa will be established, co-financed by Aabenraa, Haderslev, Sønderborg and Tønder municipalities as well as the SYD ENERGI Foundation.
- In 2020, Flensburg will be invited to join the common Southern Jutland strategic energy planning within the district heating area.
- In 2023, the first surplus heat from the data centres in Aabenraa Municipality will be delivered to the district heating network.

- In 2025, existing small and large Southern Danish companies and start-ups will have started testing and production of technology for utilisation of surplus heat to the global data centre industry.

### ACTIONS TARGETED AT ALTERNATIVE UTILISATION OF SURPLUS HEAT

Only the imagination sets limits for the possible large-scale utilisation of surplus heat in the immediate vicinity of the data centres. It might be heating of greenhouses, halls for hemp production (medical cannabis), tropical water parks, spa/wellness facilities, covered year-round camping sites with artificial beaches, air drying of agricultural products or something totally different.

- In autumn of 2019, Aabenraa Municipality will organise an innovation weekend, where the business community, tourist industry, educational institutions and innovative citizens and students from Southern Jutland will compete to develop the best concepts for exploiting the surplus heat.



## OBJECTIVE 4

**Aabenraa Municipality wishes to attract vocational education programmes that reflect the needs of the data centres and downstream industries**

In connection with construction and operation of large companies such as hyperscale data centres and their suppliers and service providers, there will be a number of new educational demands locally in Aabenraa Municipality. These will cover everything from short courses for skills upgrading to additional craftsmen training programmes and from further education for upcoming technicians in the data centre industry to study programmes for the service industry.

Skilled construction workers such as carpenters, bricklayers, painters, structurers, HVAC technicians, construction technicians etc. are all trained in Aabenraa Municipality. However, it is expected that there will be a need for additional study programmes and further education within electrical installation and HVAC (Heating, Ventilation and Air Conditioning). Here, the need is expected to grow for both the construction and the operation of the data centres. A large number of electricians will thus be employed both during the construction phase and later during the operation period. Therefore, data centre employees constitute a significant recruitment basis for short further study programmes.

### ACTIONS TARGETED AT RECRUITMENT AND SKILLS DEVELOPMENT FOR THE CONSTRUCTION PHASE

- In early 2019, Business Aabenraa and Job Centre Aabenraa will establish a task force to assist the main contractor and the subcontractors at the construction site in Kassø with recruitment/upgrading of employees during the construction period.
- Starting in 2019, Aabenraa Municipality's employment plan must support the actions of the Data Centre Strategy in order to facilitate the recruitment of employees.

### ACTIONS TARGETED AT ATTRACTING VOCATIONAL EDUCATION PROGRAMMES TO AABENRAA MUNICIPALITY

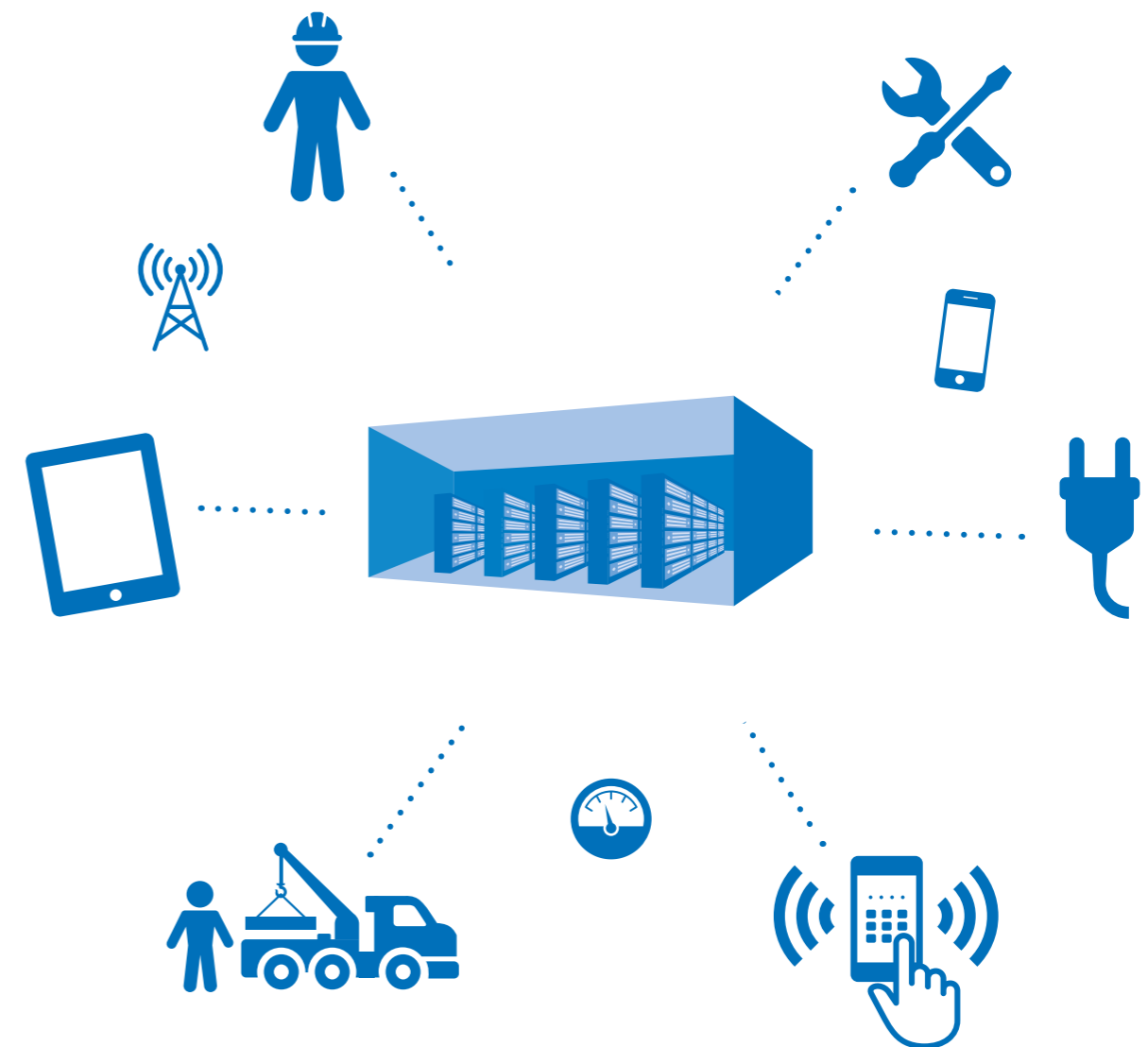
- In 2019, more vocational education programmes and short higher study programmes have been attracted to

Aabenraa Municipality within electronics and HVAC.

- In 2022, the first electricians, HVAC and automation technicians will be trained in Aabenraa.

### ACTIONS TARGETED AT FURTHER DEVELOPMENT OF EDUCATION PROGRAMMES, LOCALLY AND REGIONALLY

- In 2019, Aabenraa Municipality will cooperate with the existing educational institutions on expansion of the education portfolio, including continuing education of manpower for the operation of the data centres, especially within the craftsmen programmes.
- In 2019, a strategic co-operation will be initiated with institutions north and south of the border, e.g. Odense, Sønderborg, Flensburg or Lübeck, aimed at strengthening the medium-term programmes within IT and automation. In 2021, courses and/or programmes will be established in Aabenraa within the same areas in cooperation with established institutions in the Border Region.
- By 2020, the possibility of attracting courses or establishing cooperation with institutions offering user-financed specialisation and continuing education courses in data centre operation will have been examined.
- In 2020, Aabenraa Municipality will invite the data centres to a dialogue about educational cooperation and the proposal to provide participating educational institutions with the label 'Southern Denmark Data Centre Education and Training Centre'.
- We shall continue to support the educational institutions in Aabenraa Municipality and monitor the need for new education tracks on an ongoing basis for the benefit of both construction and operation of the data centres, and also for the subcontractors and the service industry.



## OBJECTIVE 5

### Aabenraa Municipality wishes to attract and retain managers, technicians and construction workers who will accompany the construction and operation of the data centres

The data centres will trigger further growth and activity if Aabenraa Municipality succeeds in attracting and retaining some of the many managers, technicians and construction workers who will build and operate data centres in Aabenraa Municipality, hopefully for a very long time.

**Managers and specialised technicians** will come from the data centre companies' own staff, from contractors and consulting firms, and from subcontractors who work for the data centre companies. A number of these managers are expected to be recruited abroad and may be considering a move to Denmark with spouses and children. It is thus relevant with a settlement initiative in Aabenraa Municipality.

**Technicians and construction workers** make up the largest number of employees, and about half of them are expected to be foreign workers from Germany, Eastern and Southern Europe and Ireland. An estimated 10-20 per cent of the technicians and construction workers could be a target group in connection with a settlement initiative.

Aabenraa Municipality is already working with three phases/strategic focus areas of the settlement initiative in order to attract more citizens to the municipality, namely the attraction, reception and retention phases.

#### ACTIONS TARGETED AT THE ATTRACTION PHASE, INCLUDING RECRUITMENT ASSISTANCE TO THE DATA CENTRE CONSTRUCTION

- In 2019, a special settlement package will be ready in English and German for potential newcomers to Aabenraa Municipality.
- Starting in 2019, a separate branding effort will be made to attract manpower for the data centre construction in Aabenraa Municipality, as needed.

- At the beginning of 2019, Job Centre Aabenraa will appoint a data centre case manager who will assist Apple's contractors and subcontractors, if there is a need for recruitment and upgrading.

#### ACTIONS TARGETED AT THE RECEPTION PHASE

- At the beginning of 2019, welcome packages in English and German will be developed, targeted at the 10-20 per cent among the international managers, technicians and construction workers who have settlement potential.
- At the beginning of 2019, the settlement and regulatory information on Aabenraa Municipality's English and German websites will be expanded and targeted at foreign settlement.
- In 2019, there will be welcome and network meetings in English and German for foreign newcomers.
- In 2019, data centre companies and relevant public authorities will receive offers comprising weekly visits by a mobile office or a permanent site hut, with participation of e.g. the Citizen Service Centre, SKAT (tax authorities), the State Administration, Job Centre, Info Centre Padborg, thus facilitating a smooth reception of newcomers.
- Starting in 2019, obvious settlement candidates among managers, technicians and construction workers will be identified who – as a point of departure – will only stay in Aabenraa Municipality on a temporary basis. These persons will be offered a personal welcome meeting and expanded packages and events.

#### ACTIONS TARGETED AT THE RETENTION PHASE

- In 2019, welcome meetings for newcomers will be expanded to include English and German, as needed, targeted at the most obvious settlement candidates among managers and construction workers during the construction period.
- In 2019, the municipal retention activities will be expanded on the social media, in English and German.
- In 2020, International Community Aabenraa will be set up, a network targeted at foreign newcomers and aimed at improving the reception, integration and retention of the newcomers.

#### ACTIONS TARGETED AT DAY CARE AND EDUCATION OFFERS IN ENGLISH

Day care and school offers in English and German are considered to be crucial for attraction, reception and retention of the important foreign labour force. This applies to managers, technicians as well as construction workers during the construction and the operation period, and it applies to both data centres and Aabenraa Municipality's other companies which employ foreign manpower.

The offers are directed at Danish as well as foreign families with focus on an international future for their children and at families which have previously lived abroad. By the time the first data centre is commissioned, expectedly in 2021, it is the ambition of Aabenraa Municipality to have an English education offer at primary school level. At the same time, it is the ambition that Aabenraa Municipality will be offering English-language day care.

Aabenraa Municipality is already home to the German minority's German-language day care and education offers, including a number of preschool and primary school programmes distributed throughout the municipality as well as a German upper secondary school for the entire Southern Jutland, located in Aabenraa city.

- In 2019, the possibilities for establishing an English-language room in an existing day care centre will be explored.
- In 2019, the interest among the companies in Aabenraa Municipality will be explored with respect to the establishment of an independent international primary school.
- In 2019, the possibility of establishing an education offer in English in existing independent schools or private schools in Aabenraa Municipality will be explored.
- In 2019, the possibility of establishing a free municipality experiment with an English class in an existing primary school will be explored.
- In 2019, Aabenraa Municipality will facilitate a debate among the various types of youth education concerning the establishment of education offers in English.



## OBJECTIVE 6

**Aabenraa Municipality wishes to establish long-term development collaboration with the IT companies behind the data centres within digitalisation and education as well as welfare technology for the benefits of citizens and companies**

Both Apple and Google develop and sell hardware in the form of mobile phones, tablets and computers as well as software and apps, which virtually all Danes use to some extent almost daily. Their products are widely used at all levels of the healthcare sector and the educational system. It is therefore natural to think about local cooperation opportunities with the data centre companies. The ideas in this respect range from hopes of sponsorship agreements, donations of IT equipment to collaboration on coding in the public schools etc.

It is expected that Apple and later Google will also be interested in local collaboration in Aabenraa Municipality, e.g. in the form of the so-called Community Outreach projects, where the companies do just that - reach out in an effort to play an active role in the local community that they have become part of.

Aabenraa Municipality expects that the best opportunities for extensive cooperation opportunities with data centre companies lie within digitalisation and education as well as welfare technology - two areas where Aabenraa Municipality is actively investing and has good competences.

At the same time, it is important that Aabenraa Municipalities' initiatives to collaborate with the data centre companies are prioritised and well thought through, ensuring that both parties' interests are taken into account.

### **ACTIONS TARGETED AT COLLABORATIONS ABOUT DIGITALISATION THROUGH THE DATA CENTRES' COMMUNITY OUTREACH PROJECTS**

- 2019 will see the development of a catalogue of proposals for Apple and Google with focus on IT & Digitalisation in the public schools and Digital Health and Welfare Technology. All of the municipality's administrations are included in the development of ideas for the catalogue.
- In 2021, the first partnership will be entered into regarding education-related digitalisation in the public schools in Aabenraa Municipality.
- 2022 will see the signing of the first partnership regarding development and testing of welfare technology, including data centre companies, health institutions and Aabenraa Municipality.
- In 2022, all public primary schools and secondary education schools will have had an opportunity to strengthen digital competences among children and young people, including hacker courses, coding and special theme courses about data, e.g. through courses for math teachers, through collaboration with players within the data centre industry or club cooperation such as Coding Pirates.



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