

The Danish cell tower revolt

The story of the three-way standoff between the cell phone industry, the government and several municipalities over the siting of cell phone towers in Denmark. The conflict started in 2003 and took eight years to fully finish.



Keywords: Cell tower, base station, regulation, health, siting, Denmark, Danmark, mobilmaster, antennemast, mobilstråling

The controversy apparently started with a newspaper article and a report, which were published within weeks of each other.

The article was published on August 15, 2003 in the respected newspaper *Engineering Weekly* (Ingeniøren).¹ It published a two-page story about a Danish engineer who had become so sensitive to electromagnetic radiation that he had to

quit his job and move to a remote location. The article interviewed four Scandinavian researchers — two supported the story and two were very skeptical.

Then a few weeks later, the Dutch governmental research institution, TNO, published a report with a study,² which showed the radiation from cell towers had a measurable stimulatory effect on a group of test persons. The story was carried by many newspapers in Denmark, and was mentioned several times in the following debates.

The conservative newspaper *Berlingske Tidende* started looking into the radiation from cell phones.³ It said that though the authorities and the cell phone industry do not seem to be concerned, some researchers are. It quotes the Swedish neuroscientist, Professor Leif G. Salford, as saying that the cell phone comprises the largest human experiment ever done. His research at Lund University showed that when lab rats are exposed to cell phones, the protective blood-brain barrier becomes leaky and there is an increase in dead brain cells. The implication for humans is obvious.

Dr. Jørgen Olsen, who leads the research at the Danish Cancer Society (*Kræftens Bekæmpelse*) was also interviewed and expressed his concern with the new wireless lifestyle and especially the possible effects on children.

The article ends wondering what the consequences will turn out to be in ten, twenty or thirty years.

By late October the controversy started to gather full steam. Another major Danish newspaper, *Jyllands-Posten*, published an editorial that called the situation scandalous.⁴ It compared the cell towers to x-rays, which scientists also once thought were harmless.

Then the politicians started to weigh in on the issue. The chairperson of the parliament health working group, Birthe Skaarup (of the nationalistic Danish People's Party) published an article⁵ where she expressed her concern about cell towers placed close to homes, schools and kindergartens. She also found it unreasonable that the public is kept in the dark, as the location of existing and planned cell towers is kept secret.

She concluded that the health of the citizens is more important than money and suggested a moratorium on new towers until sufficient research is available to evaluate the risks.

Three days later, *Jyllands-Posten* published its second editorial on the subject.⁶ It strongly criticized the current radiation limits in Denmark and the European Union.

Five days later *Berlingske Tidende*⁷ wrote about a major conflict brewing between the telecom industry, the central government and several municipalities. The towns of Kalundborg, Holbæk and Tølløse refused to permit any further cell towers, and the capital city of Copenhagen was expected to follow suit within days.

Meanwhile, the government was in a bind, as it had sold licenses to four telecom operators for a total of 3.8 billion kroner (approximately \$500 million), with stipulations that required the industry to provide a certain level of 3G coverage within five years.^{7,9} If the operators were denied access to some areas, they could not fulfill the stipulations.

A spokesperson for the telecom industry called the whole controversy hysteria and asked the politicians to calm down.

The Minister of Science, Helge Sander (of the Liberal Party) asked everybody to be reasonable. He also stated that the siting of the towers is up to the municipalities.

The newspaper *Information*, interviewed a scientist at Aarhus University, Sianette Kwee, who was not in doubt. She referred to a large body of science showing biological effects, including some of her own research.⁸ When asked about the many studies showing no effect, she said a lot of them were funded by the industry and such studies tend to produce the results the industry wants just as the tobacco industry once did. She mentioned that even the Danish Cancer Society have received funding from the cellular companies Sonofon and TDC, and thought that could influence the results.

The Danish government announced they intended to spend 30 million kroner (\$5 mill, 3.7 million euros) to look into the wireless health risks.⁸

The controversy continued to heat up. By December, *Jyllands-Posten* published an article titled *Trench Warfare about Radiation*.⁹ It asserted that the two sides of the issue had highly entrenched positions, while the general public was split on the issue. The article concluded that there is no doubt that the radiation affects humans, but it is unclear whether the effect can damage people's health.

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The central government's stance was that there were no documented health effects, while critics pointed out that the government was mostly focused on avoiding a conflict with the four telecom operators, who had paid for being allowed to erect their masts.

The telecom industry pointed to a government report from June 2003, which stated that there are no documented health effects and it is unlikely that there are any. The newspaper article said that this report apparently was produced at the request of the telecom industry, and has been heavily criticized.

Additional municipalities had at this point placed a moratorium on cell towers, including the major cities of Aarhus, Aalborg and Odense.

The telecom industry offered to not erect their transmitters near schools and institutions, but maintained that there were no health concerns. The critics pointed out that it makes no sense to protect the schools, if the children are exposed at home.

Two days later, the Minister of Science was quoted as saying that it is illegal for the municipalities to enact a total ban on cell towers.¹⁰ The city of Aarhus responded by requiring all cell tower applications to be individually considered by the city council, which would greatly slow down any new towers, and one of the members of the council said the city had the right to deny any new towers if it chose.

Aarhus, and possibly also Copenhagen, enacted a ban on cell towers placed on public buildings.

The Minister of Science stated that he would not force the municipalities to accept the towers, and that any legal action must come from the four tower operators. According to the article,¹⁰ the operators were very reluctant to go to court, perhaps because that could cause problems later when they would have to cooperate with the municipalities on installing their towers and infrastructure.

The newspaper *BT* published a picture of a dead bird, with the story that some British researchers speculated that the recent decline in some bird populations may be caused by the cell towers. The thought was that the radiation might make the birds sterile, or disturb their navigation, which is based on the Earth's natural magnetic field.¹¹

The *Engineering Weekly* did not take sides on the issue, though in a January 2004 article¹² it stated that in the scientific world there were essentially two camps:

neutral and against the towers. The article then compared the various types of wireless radiation in a typical home.

On February 18, 2004, the front page of *Jyllands-Posten* had the header: *The battle is lost — the mast ban is about to fall*. The accompanying article¹³ reported that the County of West Sealand (Vestsjællands Statsamt) had ordered the town of Kalundborg to allow the cell towers. The decision was accepted by the major cities of Copenhagen, Aalborg, Aarhus and Herning, which said they would start processing applications for cell tower sitings. The town of Silkeborg intended to continue the fight.

The Danish government made the decision that the antenna siting database will be made public on a government web site, so citizens are informed about present and future towers.¹³ This became the website www.mastedatabasen.dk.

The Danish parliament held a hearing on the cell tower issue on March 10, 2004.¹⁴ It lasted six hours and included presentations by researchers supporting both sides of the issue. The result was that all the Danish municipalities were ordered to plan for future cell towers. This meant that each municipality could choose to have the towers sited at less controversial locations, such as away from schools. This also makes it possible for the municipalities to require the operators to share towers, instead of each having their own. The process allows citizens to protest specific sites, and they are welcome to bring up the health concerns, as long as they are fact-based.

The aftermath

The media was remarkably quiet on this issue for the next three years.

Politiken published an article about a student at Aarhus University who thought cell towers are best placed on top of schools, since the kids' cell phones would then radiate less than if they were talking to a tower further away. A professor was asked about it and said that even though a cell phone radiates much more than a tower, it only does that for a short period of time, while the tower radiates 24/7.¹⁵

The city of Aarhus kept discouraging the placing of cell towers at schools and daycare centers.²³ It is unclear whether any other municipality did.

The science arrives

By 2008 the results of the Danish studies arrived. The *Engineering Weekly* pronounced the results: "Six Danish research projects exonerate cellular radiation."¹⁶

Three of the studies looked for various changes in the brain of people or rats, when exposed to cellular radiation. One of them¹⁷ tried to replicate the Dutch study² that started the controversy, but besides producing headaches in the testers, there were no other problems, and the scientists thought the headaches could be for other reasons.

The flagship study was the Danish Cohort Study, which is an ongoing project following 420,000 Danish cell phone users over many years. It has so far not found any increased risk of cancer or other neurological diseases, though the cell users have more trouble with migraines and dizziness.¹⁸

The Danish Cohort Study has been heavily criticized by several international scientists,^{19,20} who point out some very serious flaws. One problem is that 200,000 heavy cell phone users are in the “unexposed” control group. Another is that users of cordless phones are considered “unexposed,” even though the radiation is very similar. This criticism does not appear to have been mentioned in the Danish media.

The fifth report was a theoretical consideration of what mechanism might cause an effect in the brain. The last report was a social study.

The chairman of the committee overseeing the research projects, professor Philippe Grandjean, cautioned against concluding there are no health effects, but he stated that it looks like they are limited.²¹

The last holdout falls

Ekstra Bladet reported in 2009 that the Danes’ thirst for wireless means that the cellular companies need to install six new towers a day for the next two years.²²

The city of Aarhus had continued to discourage cell towers by schools and daycares, but by 2010, the industry created a confrontation.²³ A telecom operator wanted to upgrade an old tower on the Grønlykke school in Aarhus, but the school administration refused. The telecom operator appealed to the *Statsforvaltning*, which ruled that Aarhus could not refuse a tower based on health issues. They contended that the health issues were settled by the six reports published in 2008.

The ruling went further and stipulated that Aarhus must stop discouraging the placement of towers near schools and daycare centers.

The city of Aarhus complied by issuing new guidelines (“antennevejledning”) for the siting of towers. The new guidelines were now limited to aesthetic criteria that

encouraged placing the antennas on tall buildings and smoke stacks, and placing the towers in industrial areas and along major roads.²³

The fall of the last holdout was reported only by the local media in Aarhus.

Six months later, *Aarhus Stiftstidende* complained that the second largest city in Denmark was behind most other Danish cities in the wireless buildout. The article referred to the city of Aarhus as a digital backwater, due to the restrictive tower siting policies. A spokesperson for the city administration says that the city's restrictive policies are now a thing of the past.²⁴

Towers everywhere

Today, there are towers everywhere in Denmark, and more are coming. People and businesses are clamoring for better coverage and higher speeds. Some rural communities even offer rent-free sites and cash payments to bring in the towers.^{24,25,26}

It is rare that there is resistance to a new tower, and when it happens, the health issue is brushed away as being without merit.²⁷

In 2012 a senior scientist at the Technical University of Denmark stated on national TV that she was electrically hypersensitive,²⁸ and in 2014 the magazine *Information Weekend* (part of the daily newspaper *Information*) had a theme issue where they interviewed four people with EHS,²⁹ but otherwise people with EHS are not mentioned by the media.

Commentary

Denmark missed a golden opportunity to use the precautionary principle to create prudent guidelines for siting cell towers and other transmitters. The industry was willing to compromise and offered to leave schools and daycare centers alone. They might also have agreed to keep some minimum distances to people's homes, especially by not placing their transmitters on the roof of apartment buildings. It is much more difficult to improve the situation after the towers have been built.

The six Danish reports seem to have put the whole issue to rest in the eyes of the authorities and the media. Neither of them found any major problems, so this is not surprising. It is common for any country, large and small, to consider its "own" research far superior to anything made elsewhere, and that may be a factor in why international research played such a small role, and why the criticism was ignored.

The website for the Danish Cancer Society (accessed Aug 31, 2014) states that only 4% of their budget comes from public sources. The rest are individuals and corporate sponsorship. Their Danish Cohort Study was started before the government allocated the 30 million kroner for research in 2003, so it appears to be using corporate funds, as stated by Sianette Kwee.⁸ It is common that large sponsors influence the design of a study and there is a large body of evidence that corporate sponsored research tends to reach conclusions that favor their sponsors, which may explain why this study is so poorly designed.²⁰

Neither of the six reports studied the effect of cell towers. The logic was probably that it is easier to find health effects from a cell phone, since it radiates a person more powerfully. But a tower radiates 24/7, including at night when people may be more vulnerable, so they are not comparable.

The rate of brain cancer in Denmark has risen dramatically over the past decade. From 2003 to 2012 it went up by 41% for men and 46% for women. Nobody knows the cause, and apparently there is great resistance at the Danish Cancer Society to consider the obvious possibility.³⁰

The restrictive tower siting policies in Aarhus lasted nearly eight years and have created the opportunity to compare the health statistics with another city in Denmark to see if the policy made a difference. But, is there any scientist willing to try, while the whole country seems to be cheerleaders for even more towers?

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