

KG 2021

Nordic Expert Meeting

Centre for Sports Facilities and Technology

Bjørn Aas

2019-09-11



Identify the users

Top fotball

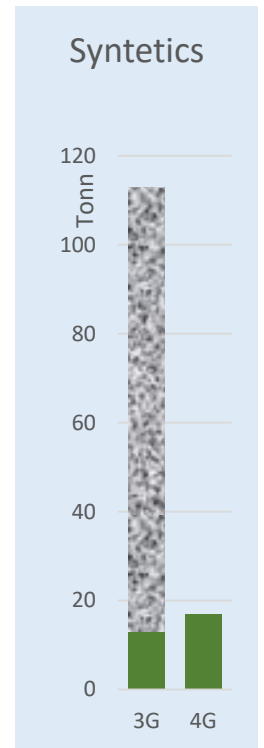
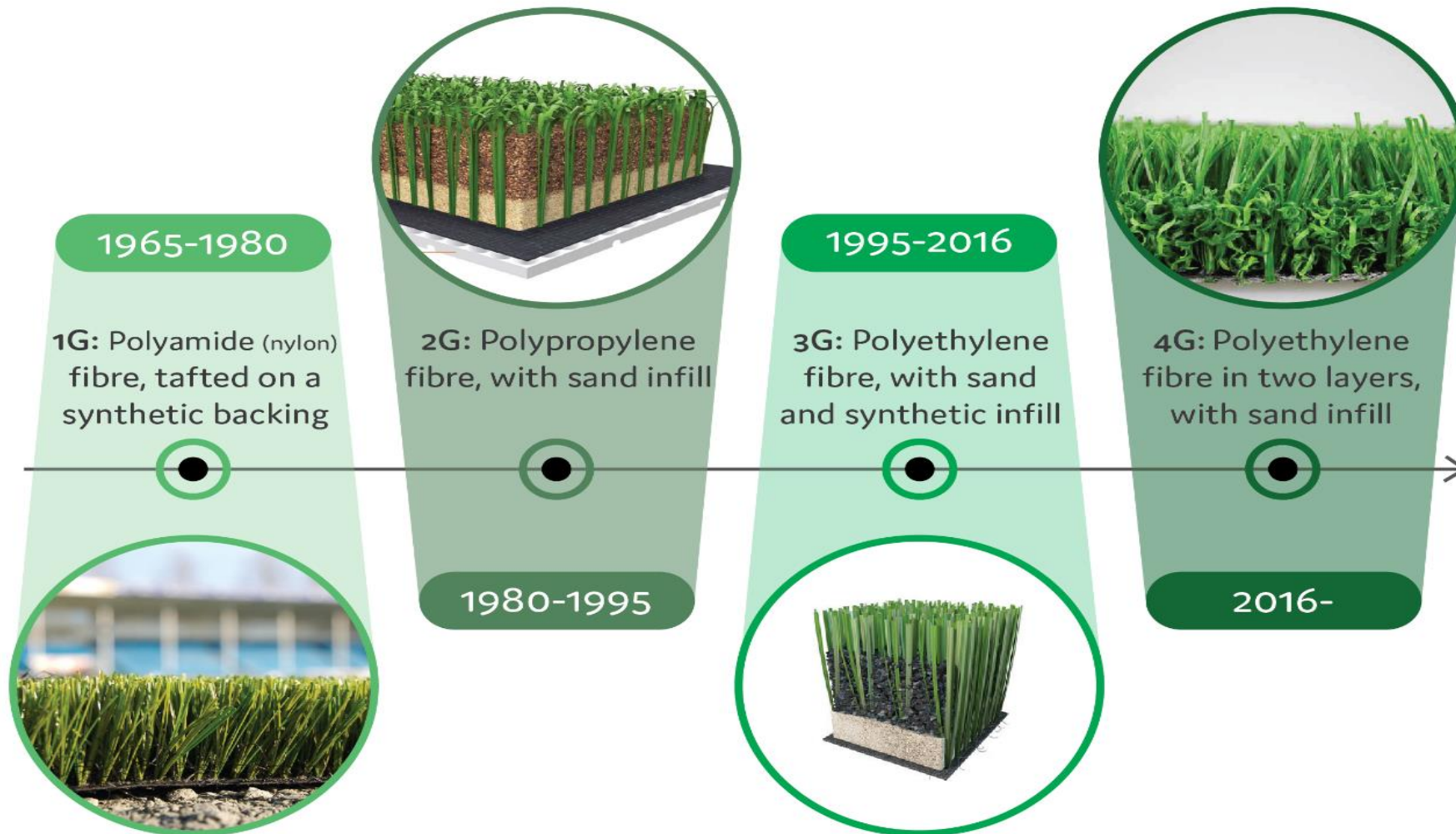
- 4 000 persons (Elite, 1.,2.,3.div)
- 150 fields (11-size)

Schools, kids, youth

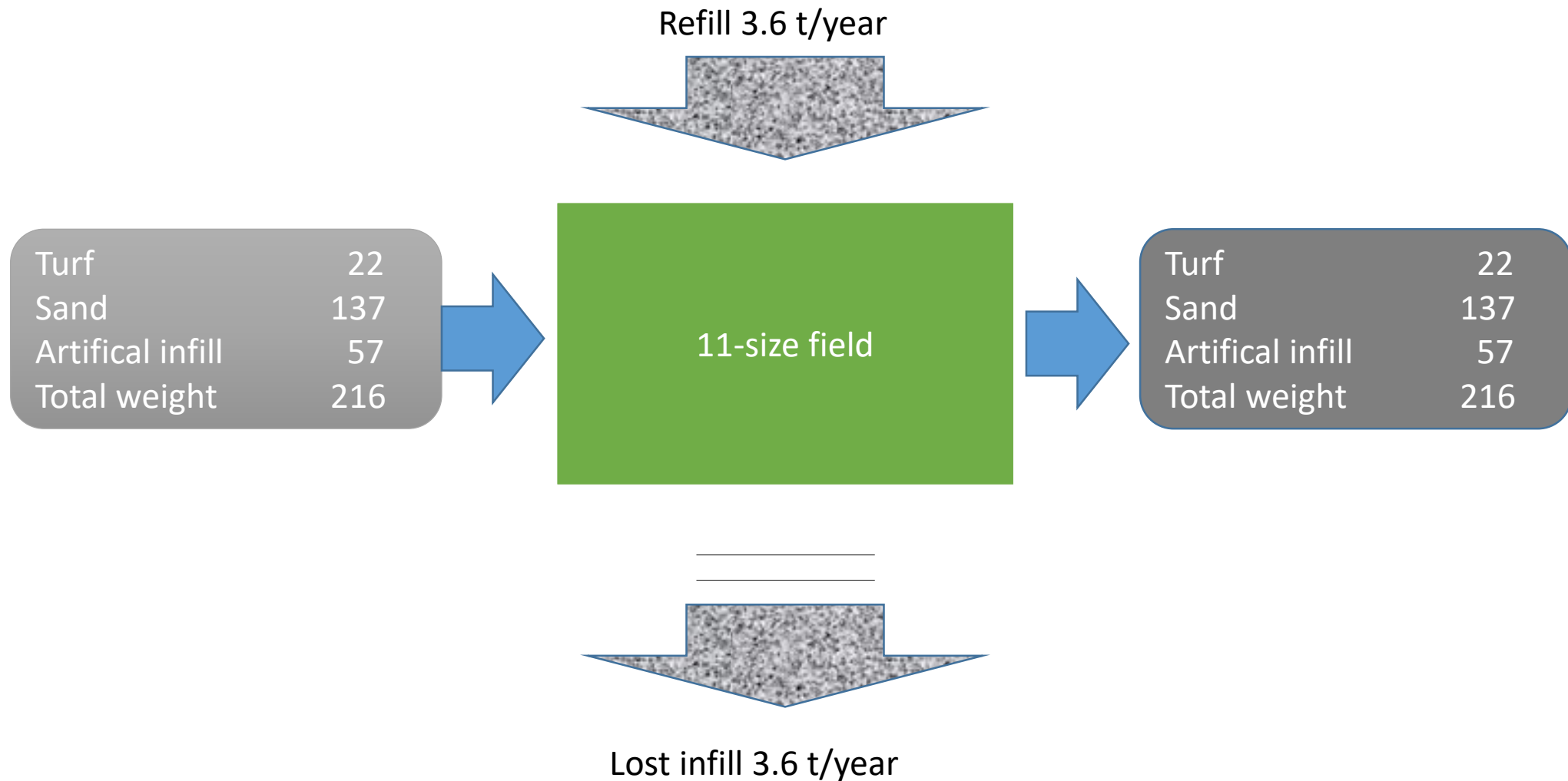
- 335 000 users
- 1700 fields (5-7-9-11size)



Turf history in short



Mass balance in life time of 10 years



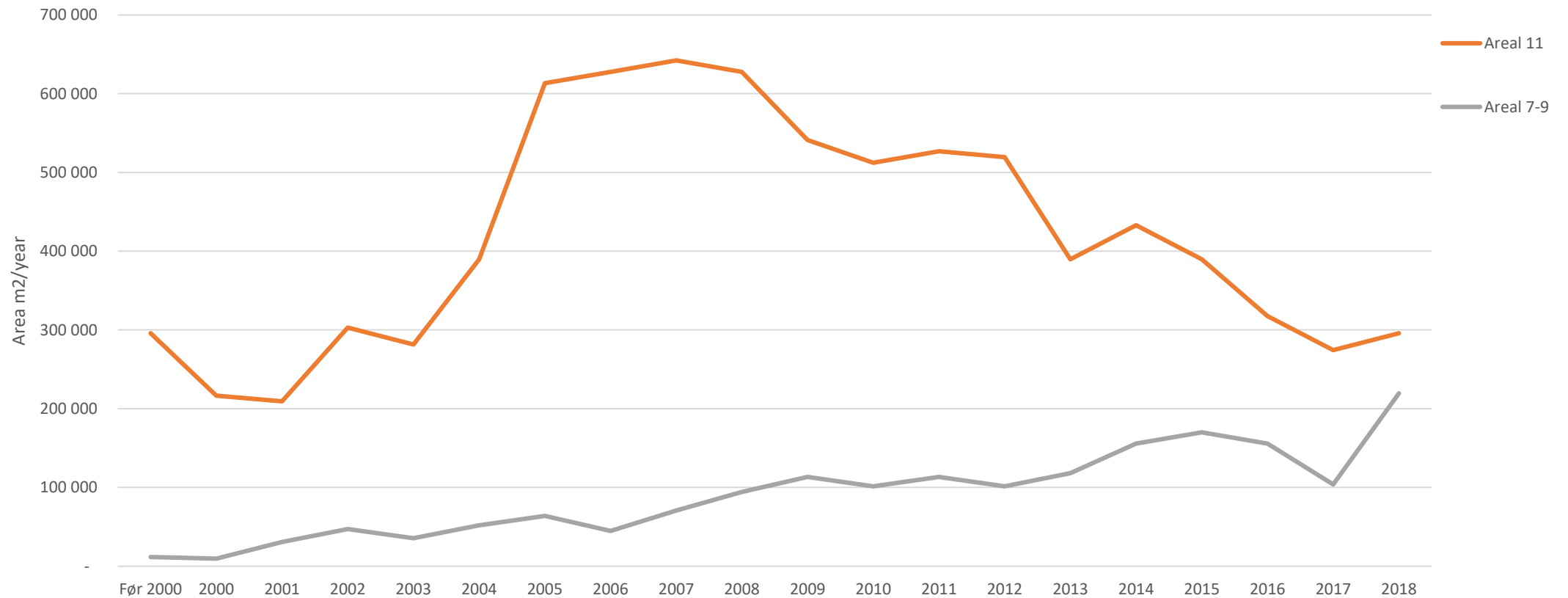
National guidelines – artificial turf

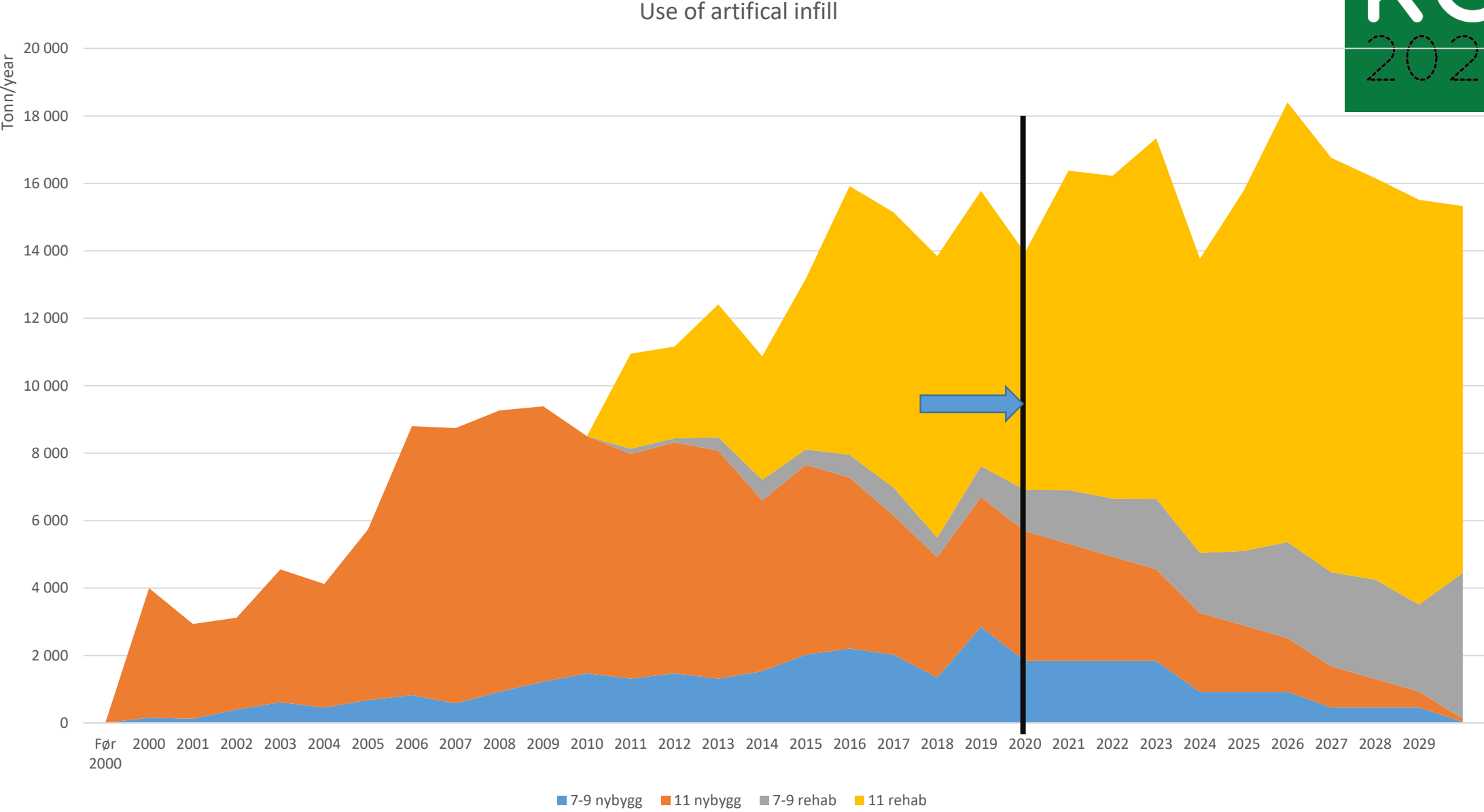
Men	Level	Norway	Sweden	Denmark	Germany	Netherlands	France	Belgium	UK
	Elite	FQPro	FQPro	FQPro	EN-DIN	KNVB2-15	EN-DIN	EN-DIN	EN-DIN
	1.div	FQPro	FQPro	FQPro	EN-DIN	KNVB2-16	EN-DIN	EN-DIN	EN-DIN
	2.div	FQPro	Nordic	FQPro	EN-DIN	KNVB2-17	EN-DIN	EN-DIN	EN-DIN
	3.div	FQPro	Nordic	FQ	EN-DIN	KNVB2-18	EN-DIN	EN-DIN	EN-DIN
	4.div	Nordic	Nordic	FQ	EN-DIN	KNVB2-19	EN-DIN	EN-DIN	EN-DIN
	Others	Nordic	Nordic	FQ	EN-DIN	KNVB2-20	EN-DIN	EN-DIN	EN-DIN
Ladies	Level	Norway	Sweden	Denmark	Germany	Netherlands	France	Belgium	Switzerland
	Elite	FQ	FQPro	FQPro	EN-DIN	KNVB2-15	EN-DIN	EN-DIN	EN-DIN
	1.div	Nordic	Nordic	FQPro	EN-DIN	KNVB2-16	EN-DIN	EN-DIN	EN-DIN
	2.div	Nordic	Nordic	FQ	EN-DIN	KNVB2-17	EN-DIN	EN-DIN	EN-DIN
	3.div	Nordic	Nordic	FQ	EN-DIN	KNVB2-18	EN-DIN	EN-DIN	EN-DIN
	4.div	Nordic	Nordic	FQ	EN-DIN	KNVB2-19	EN-DIN	EN-DIN	EN-DIN
	Others	Nordic	Nordic	FQ	EN-DIN	KNVB2-20	EN-DIN	EN-DIN	EN-DIN

Iceland?
Finland?

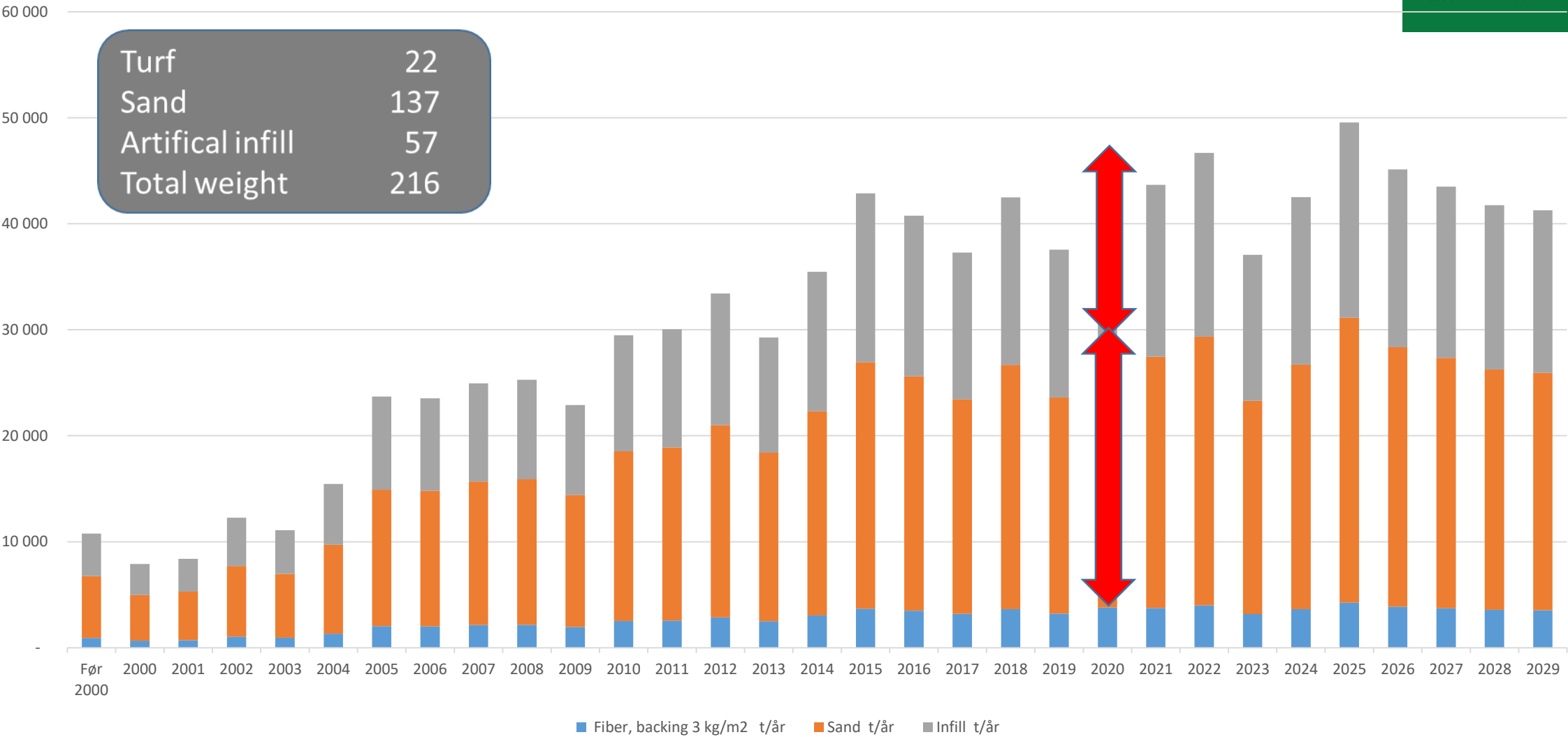
* Standard in Netherlands close to Nordic Norm and EN 15330-1

New and renovated fields, m2/year





Waste quantities tonns/year



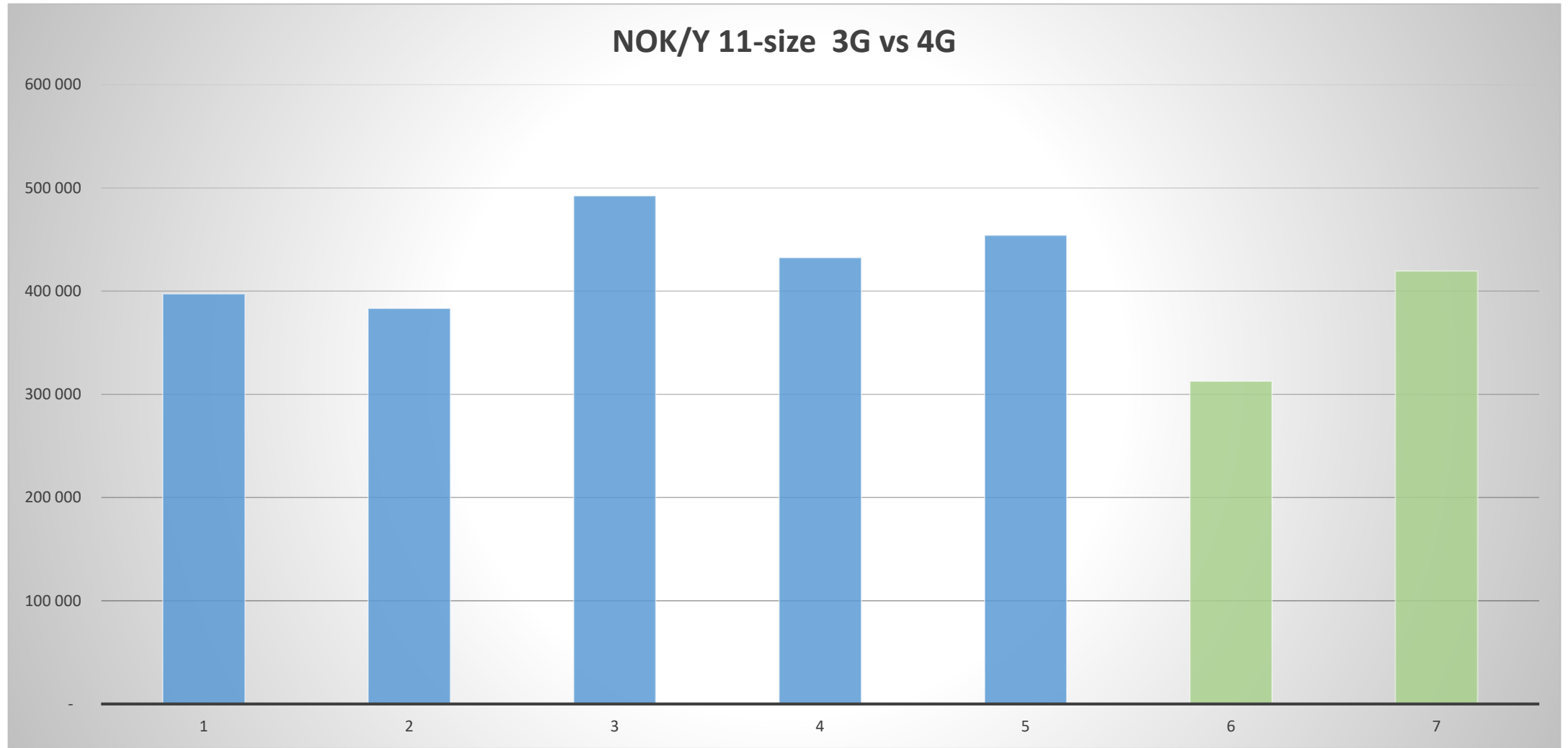
Fiber



- 0.5 – 5% loss/year
- Low quality fiber
 - Polymer
 - UV-resistance
 - Low quality tufting
 - Low quality backing



Annual costs artificial turf systems



Future trends

- EU
 - Reduce plastic waste
 - 35% down by 2035?
 - ECHA: Draft proposal:
 - Ban of microplastics 2021
 - Germany, NL implementing the code
 - German Soccer Union approves the proposal, but request 6y transition period
- Norway
 - New regulations in pipeline
 - Measures to avoid loss of infill
 - Nothing on chemical pollution
 - Use of salt?
 - Substantial investments (200-300 m€)
 - **No government funding**

Strong market growth - 10y renovation cycle will hit owners

Norway

With number of fields pushing 2000:

- from ~50 => ~200 fields/year in 4-6 years
- from ~250 mNOK => ~1 000 mNOK/y
 - Is the public funding available?
- Is the FIFA-law aligned to the code for lottery-funding?
 - 5y lifetime
 - 1 000 h/year operation
- Wake-up call for the use of EN and Nordic Norm?

Accessibility
Self-organized activity



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Thank you for your attention

Bjorn.aas@ntnu.no

<https://www.ntnu.no/siat/kunstgress2021>

