

Advent Calendar 2024

24 stories from the history of Wind & Site

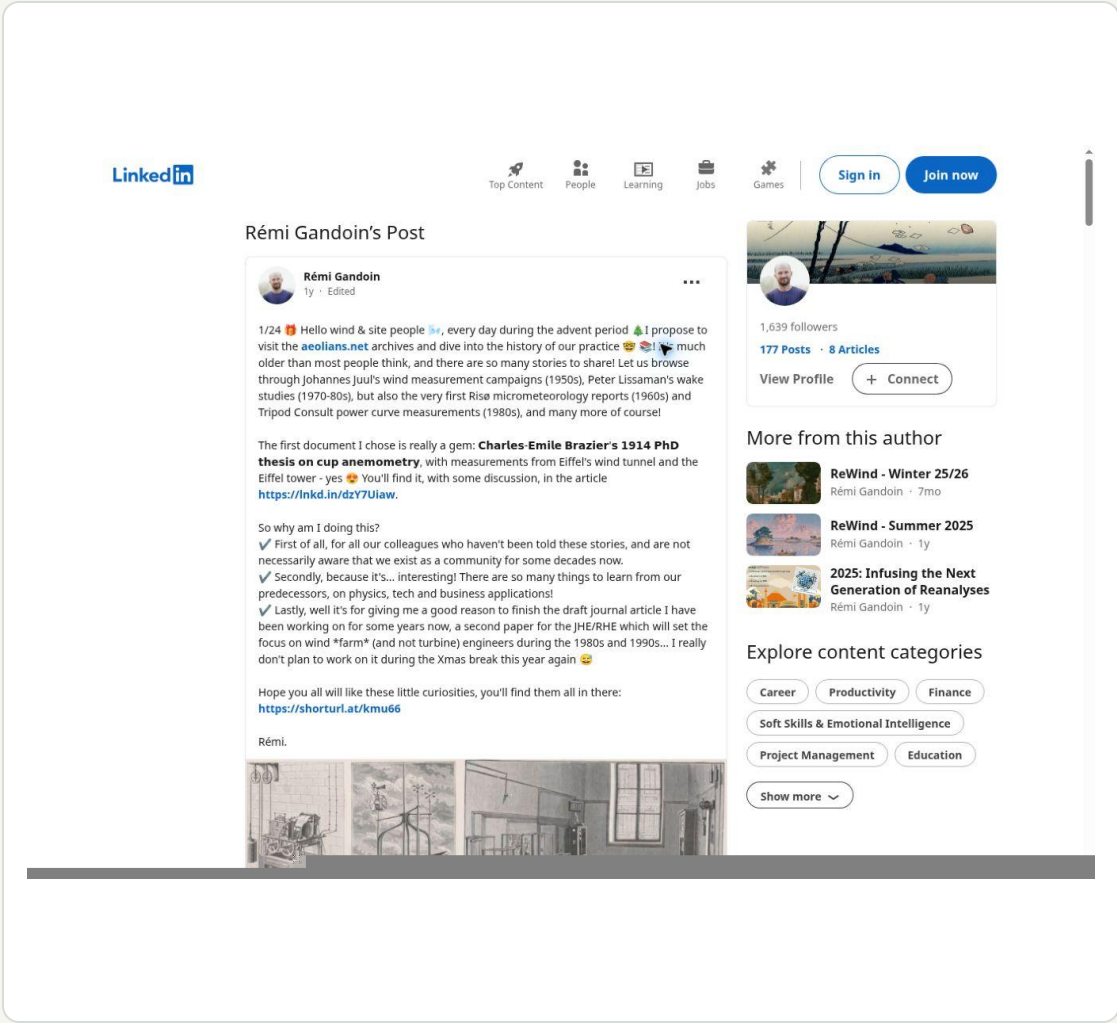
Rémi Gandoin

Brazier's 1914 cup-anemometry thesis

The calendar opens with Charles-Émile Brazier's PhD research: Eiffel wind-tunnel and Eiffel Tower measurements that reveal how deep the roots of wind measurement run.

A genealogy of Wind & Site begins long before the modern wind industry.

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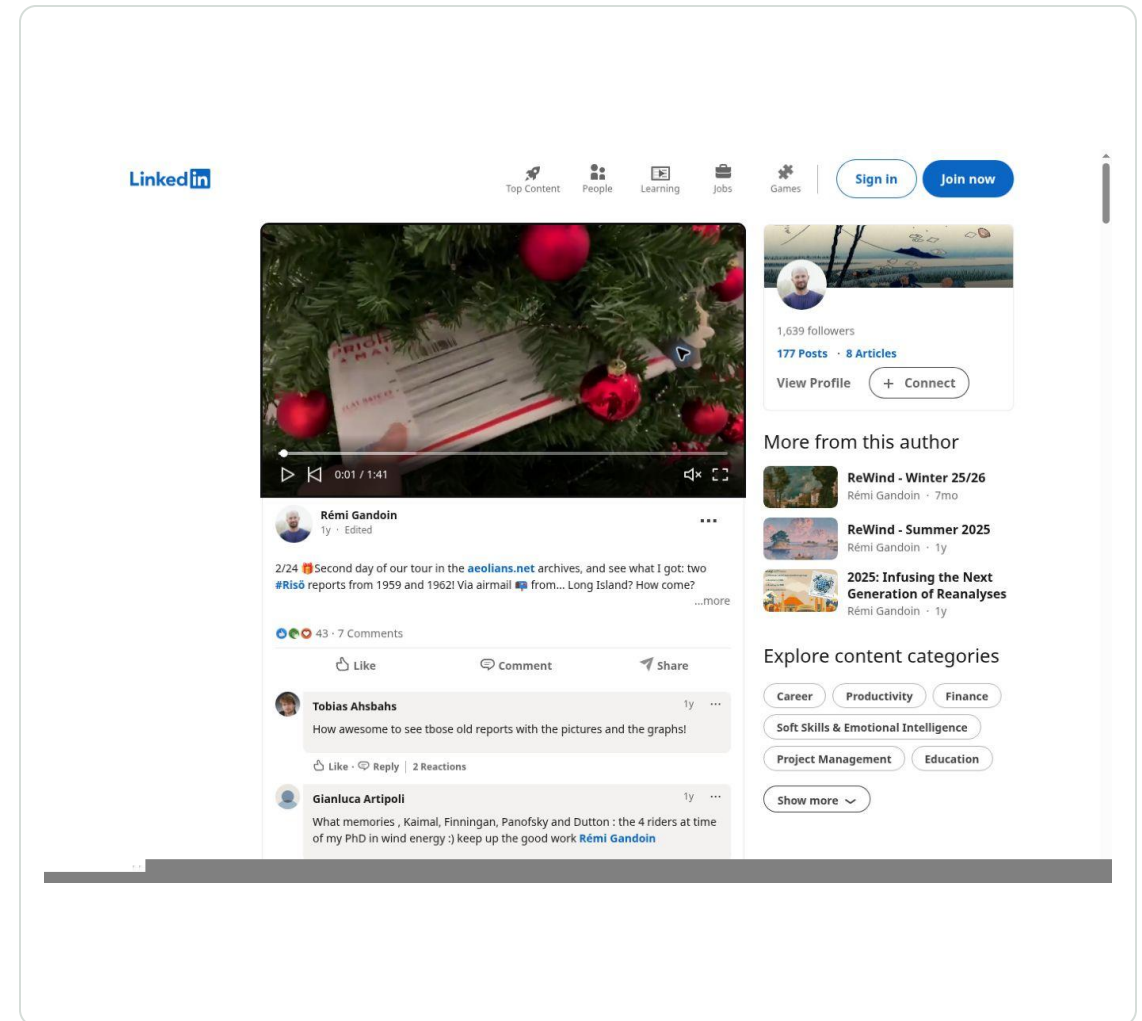


Risø's meteorological inheritance

Two Risø reports from 1959 and 1962 connect Danish boundary-layer research to Brookhaven, Niels E. Busch, Kaimal and Panofsky.

Wind-energy meteorology grew from decades of turbulence, pollution and nuclear-safety research.

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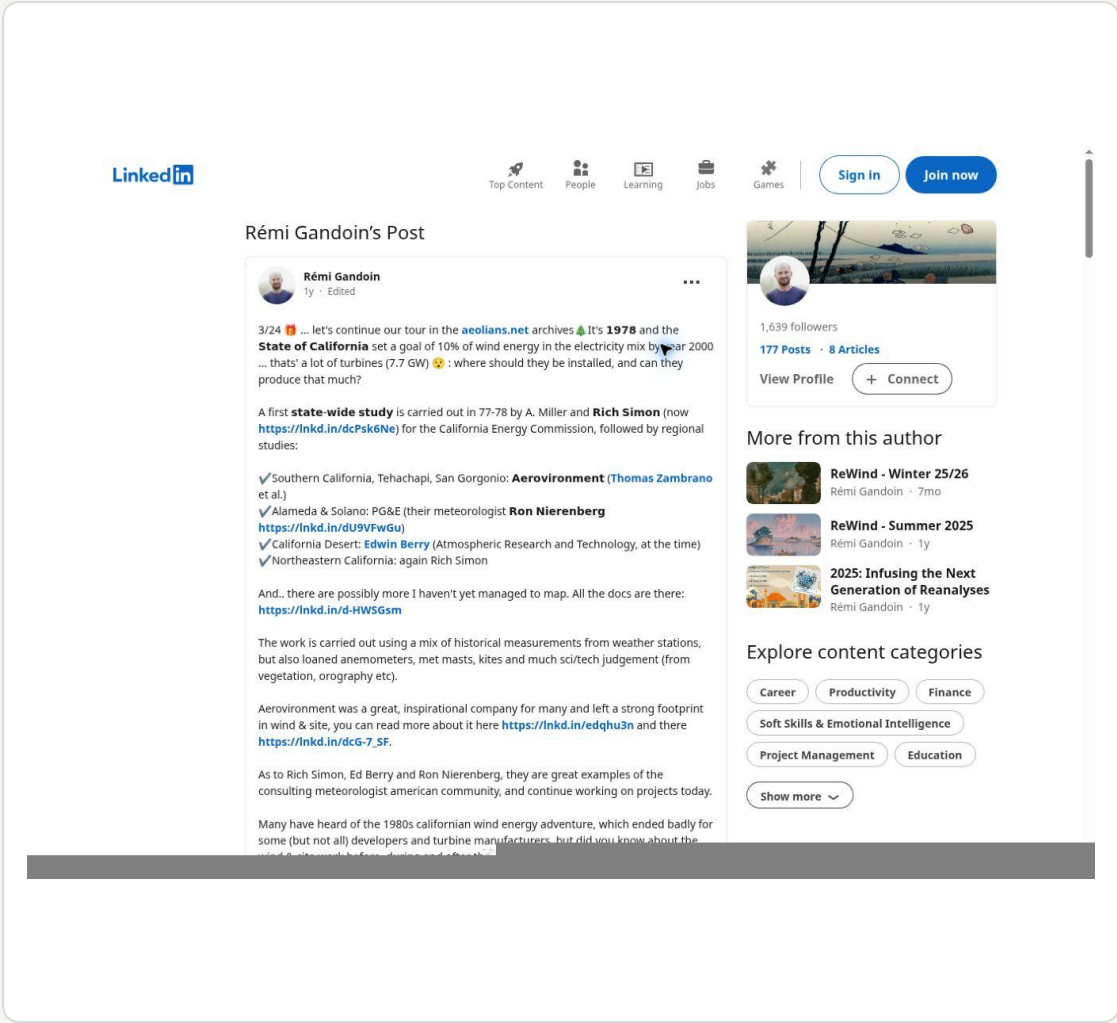


Mapping California before the wind rush

California’s 1978 target triggered state-wide and regional resource studies by Miller, Rich Simon, AeroVironment, PG&E and consulting meteorologists.

Historical stations, loaned anemometers, masts, kites and expert judgement all shaped the first wind atlases.

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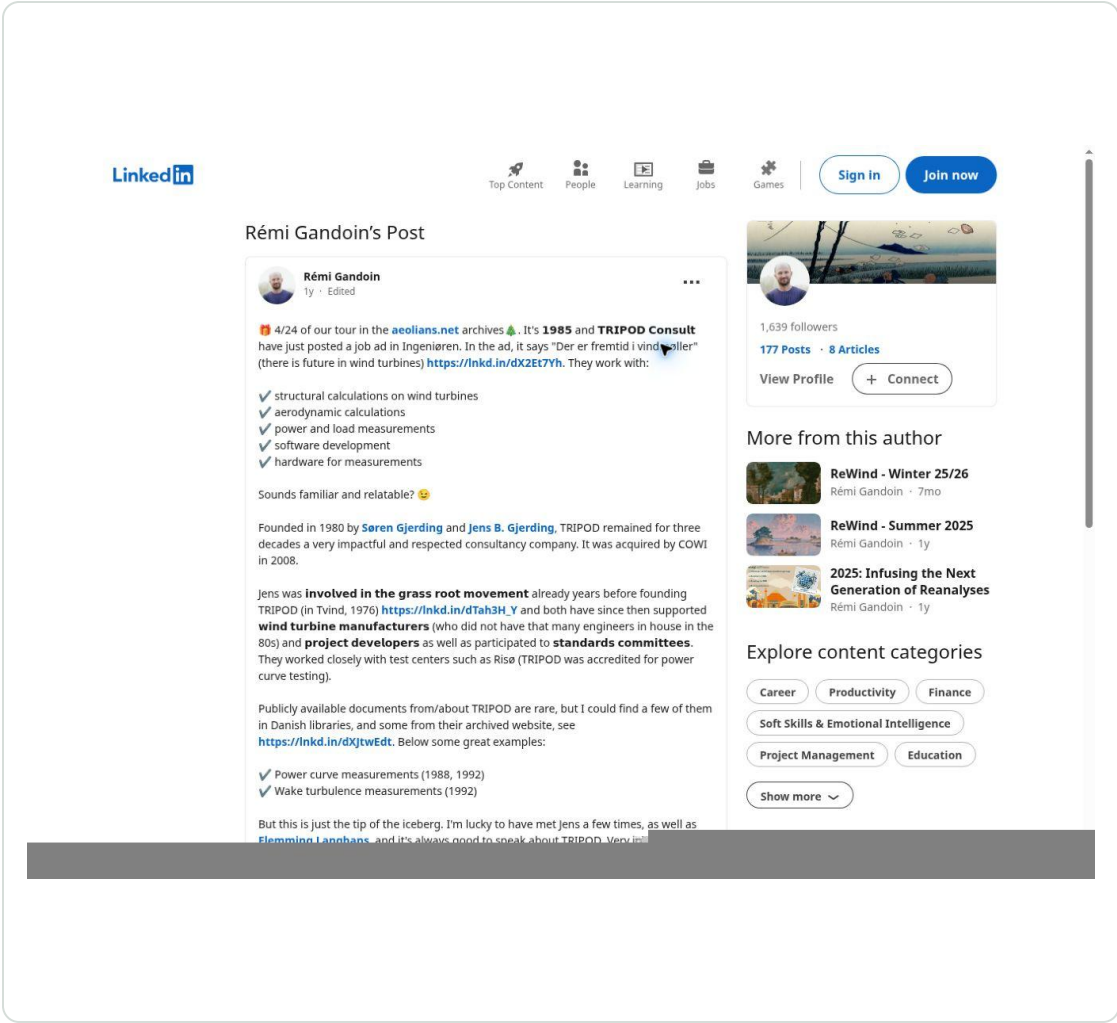


TRIPOD: 40 years of Wind & Site

Founded by Søren and Jens B. Gjerding, TRIPOD linked grassroots engineering, turbine design, measurements, software and standards.

Its power-curve and wake-turbulence work deserves a larger place in wind-energy history.

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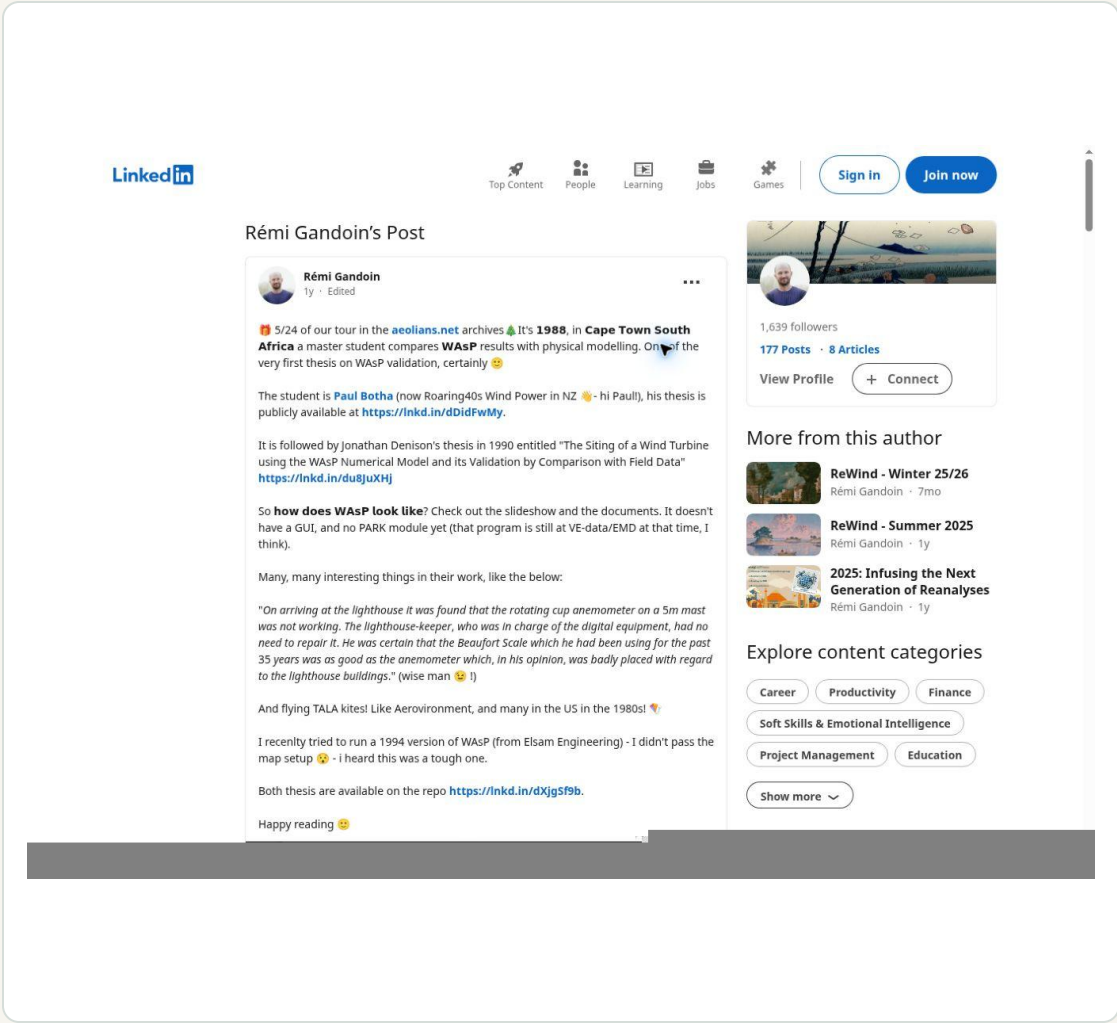


Being a WAsP user in 1988–1990

Early South African theses by Paul Botha and Jonathan Denison tested WAsP against physical models and field observations.

The stories include command-line workflows, difficult map setup, TALA kites—and a lighthouse keeper who trusted the Beaufort scale.

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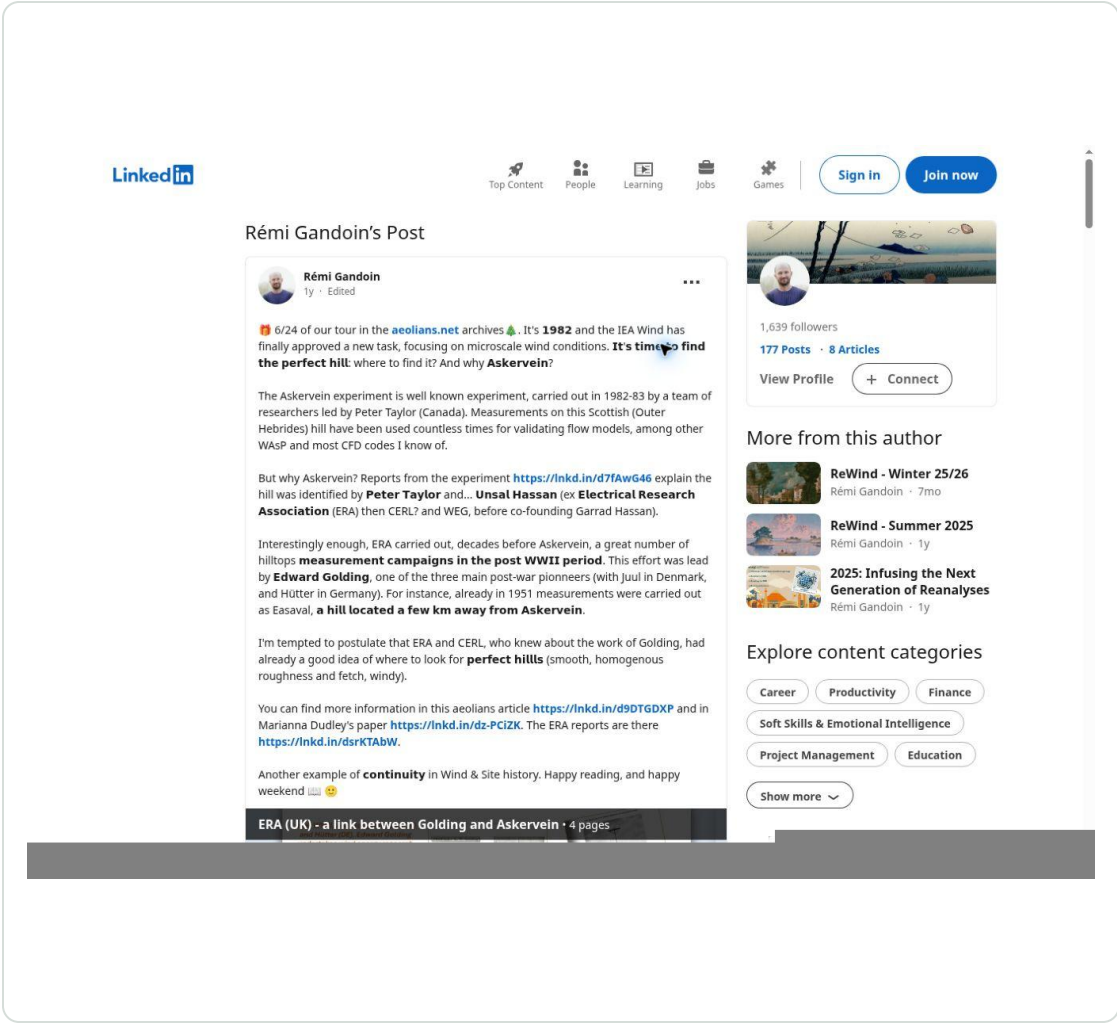


Why Askervein?

The famous 1982–83 hill experiment followed earlier ERA hilltop campaigns led by Edward Golding, including nearby Easaval in 1951.

Askervein shows continuity between post-war measurement traditions and later model validation.

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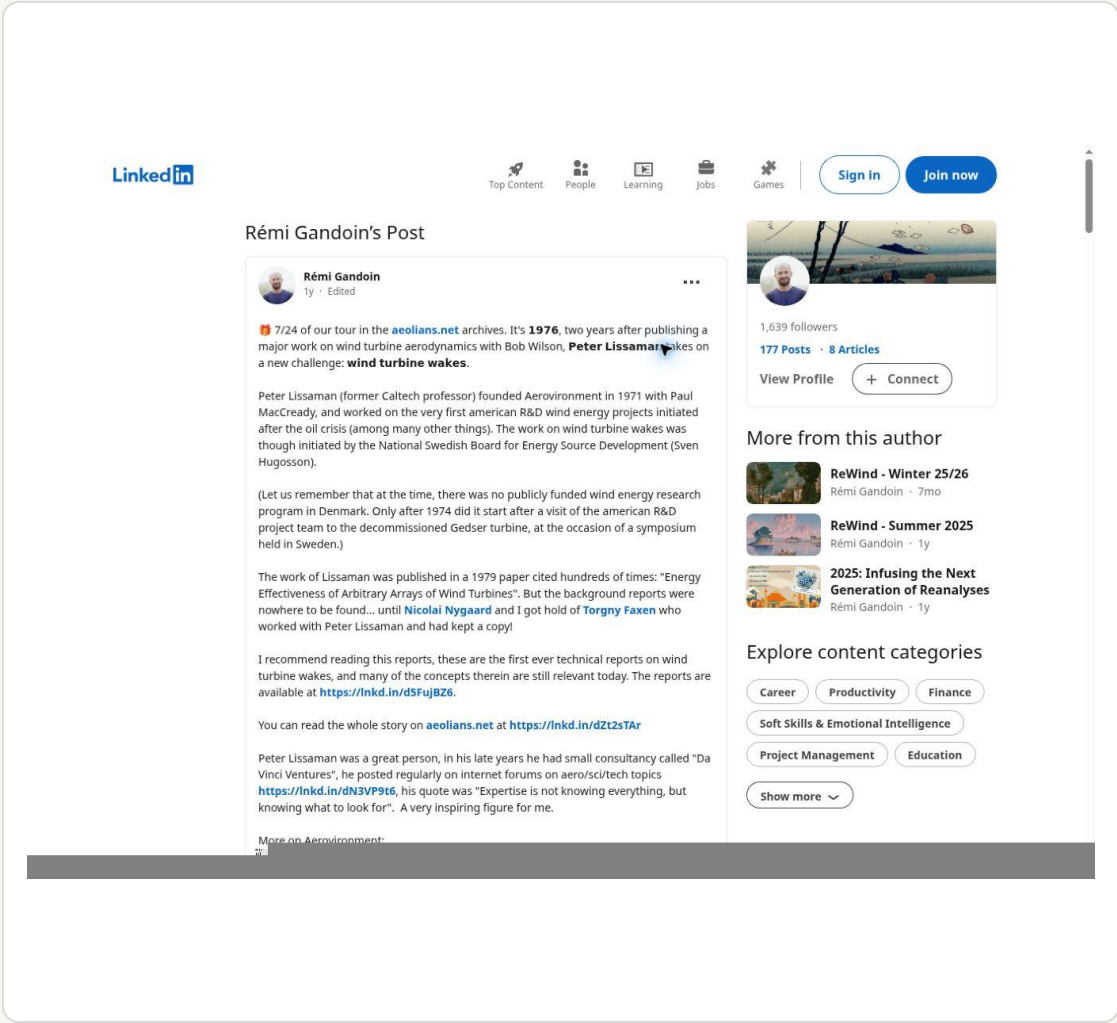


Peter Lissaman and the first wake reports

AeroVironment’s Peter Lissaman began systematic wind-turbine wake research in 1976 for the Swedish energy board.

Background reports recovered through Torgny Faxén preserve concepts that remain relevant to wake engineering today.

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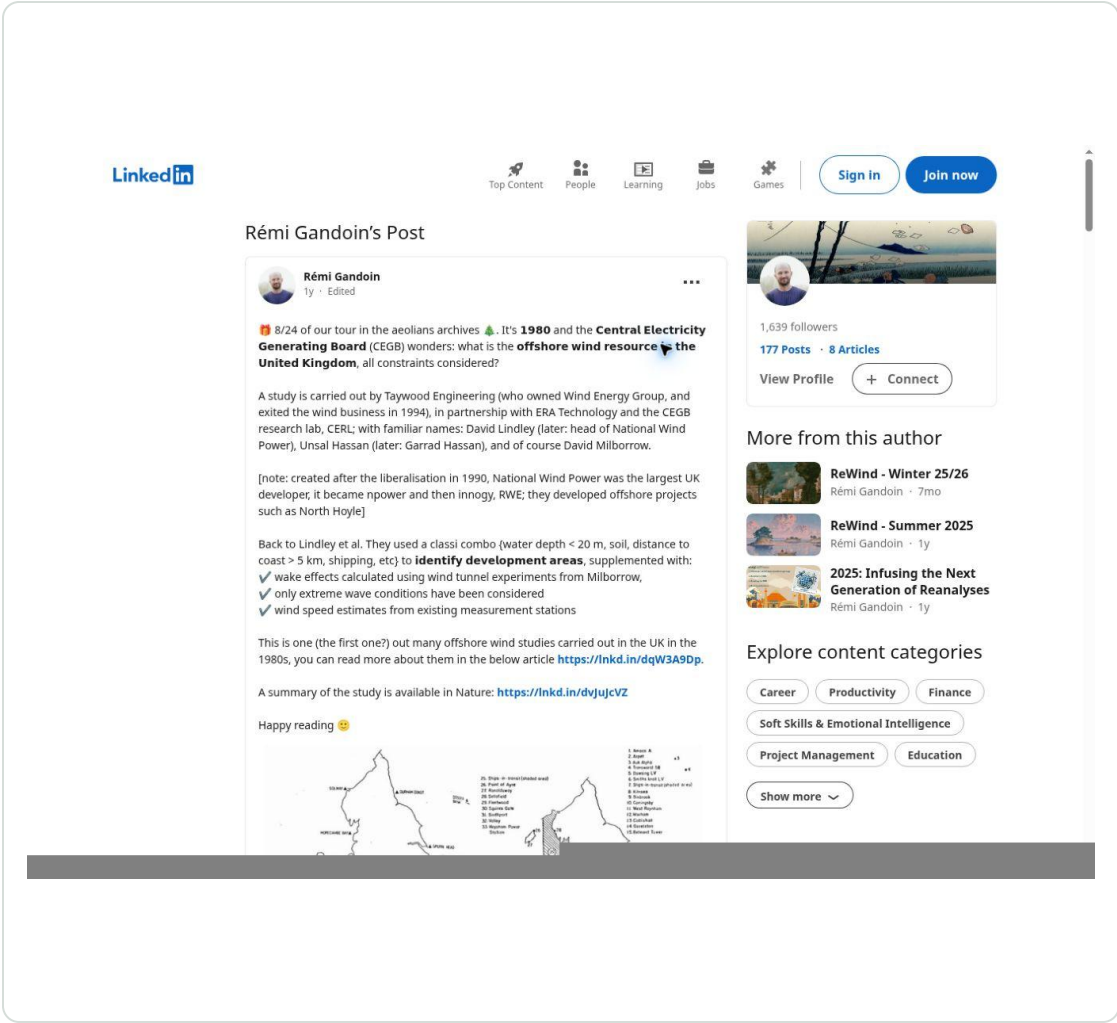


The UK imagines offshore wind—in 1980

CEGB, Taywood, ERA and CERL combined water depth, soils, distance, shipping, wind and wake effects to identify offshore development areas.

The study anticipated the multi-constraint spatial screening now standard in offshore development.

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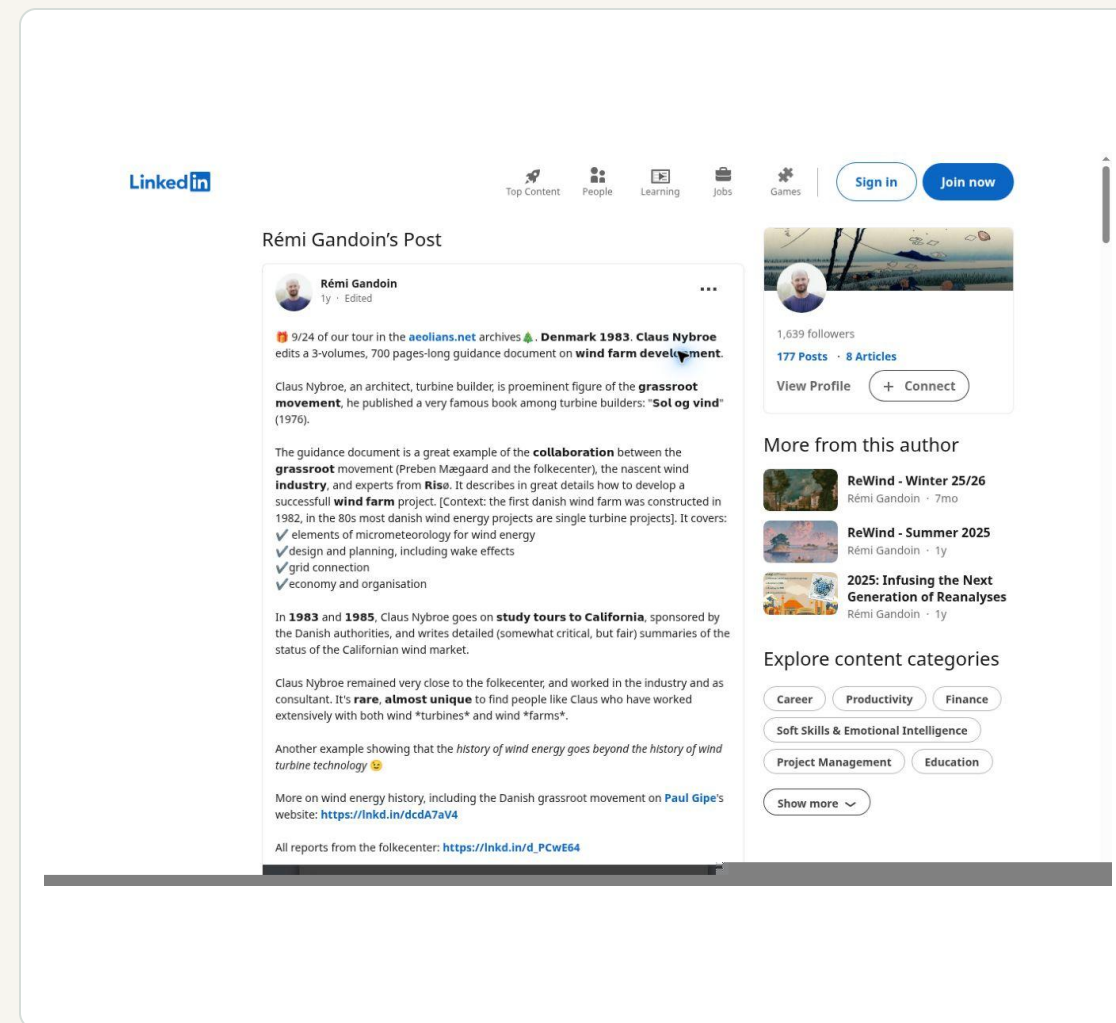


Claus Nybroe designs turbines and wind farms

A 700-page Danish guide from 1983 joined micrometeorology, layout and wakes, grid connection, economics and organisation.

Nybroe embodied the rare bridge between grassroots turbine building and professional wind-farm development.

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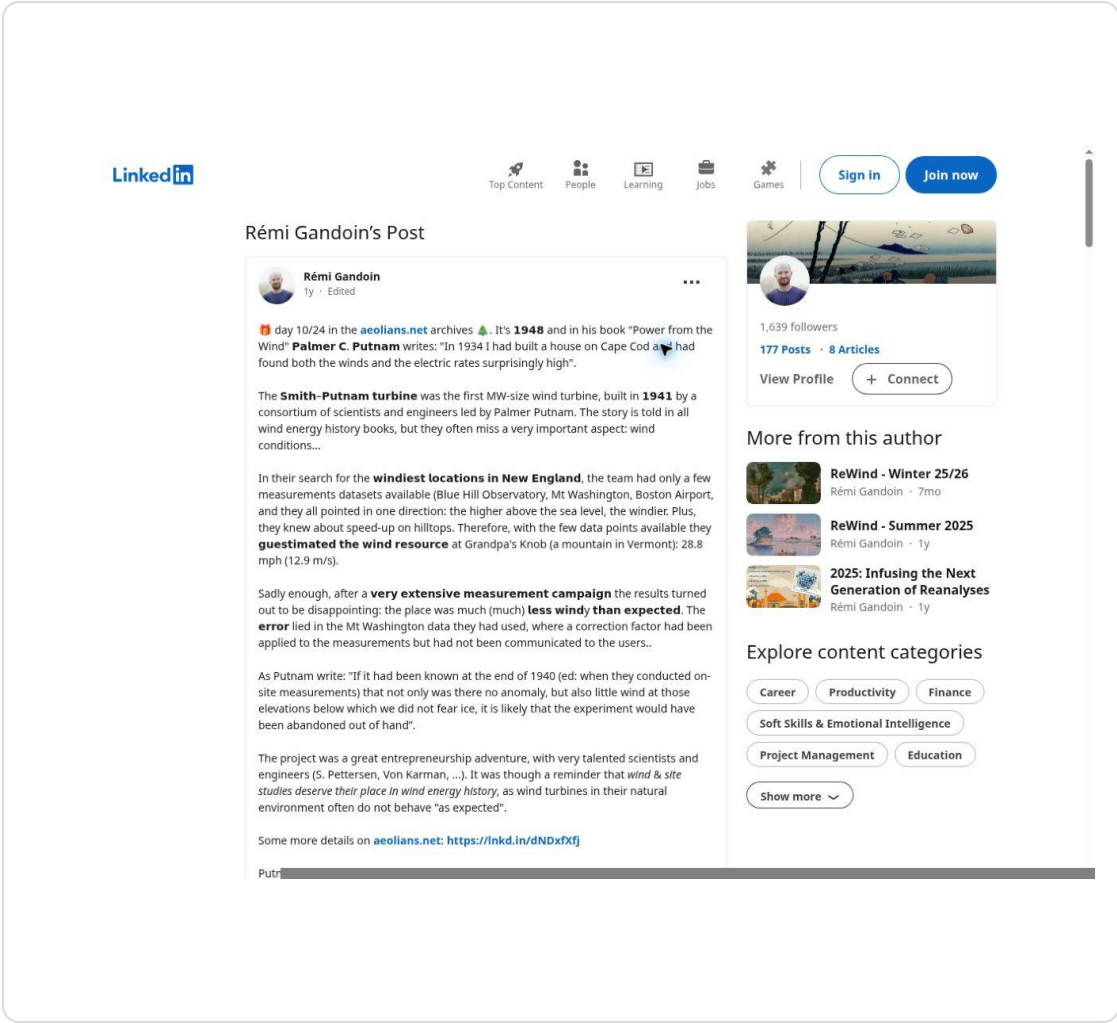


Putnam learns that “wind is not wind”

The Smith–Putnam team overestimated Grandpa’s Knob after relying on corrected Mount Washington data whose correction was not communicated.

The episode shows why field measurement and site knowledge belong at the centre of wind-energy history.

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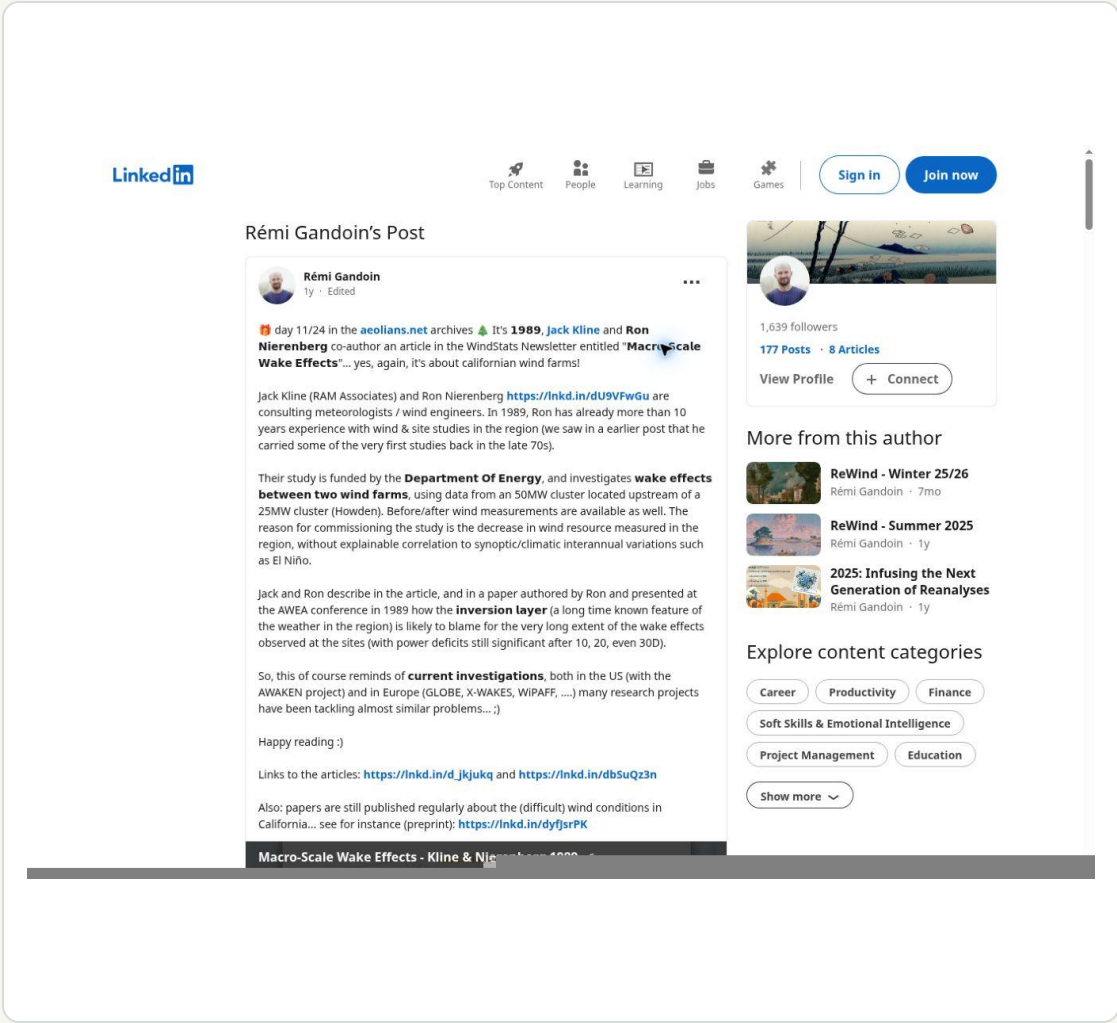


Macro-scale wakes in California

In 1989 Jack Kline and Ron Nierenberg investigated deficits between neighbouring wind farms under a persistent inversion layer.

Power deficits at 10–30 rotor diameters foreshadowed today’s research on long, atmosphere-controlled wind-farm wakes.

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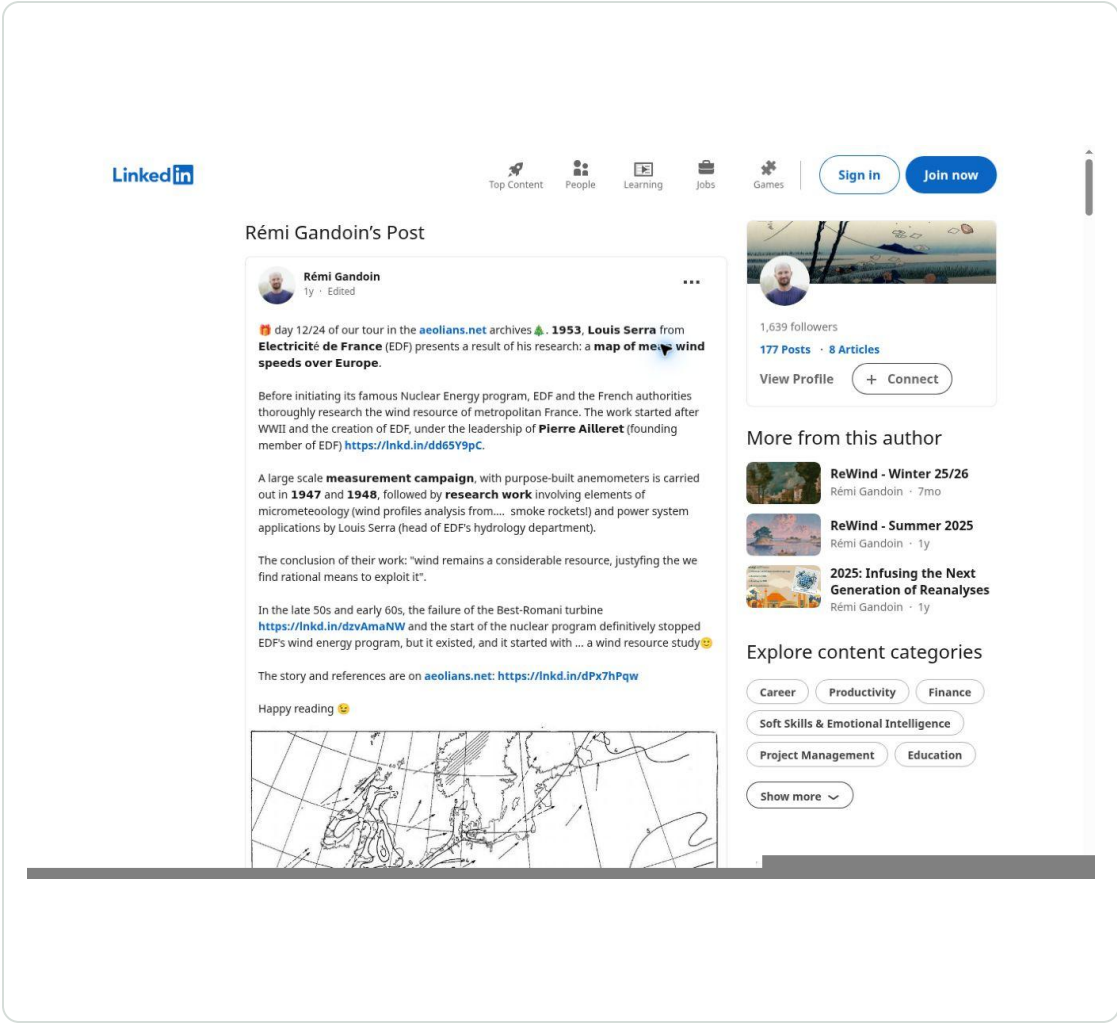


EDF maps Europe's wind in 1953

Louis Serra presented a European mean-wind map after EDF's 1947–48 measurement campaign and micrometeorological research.

France's early wind programme began with resource assessment before the nuclear programme redirected priorities.

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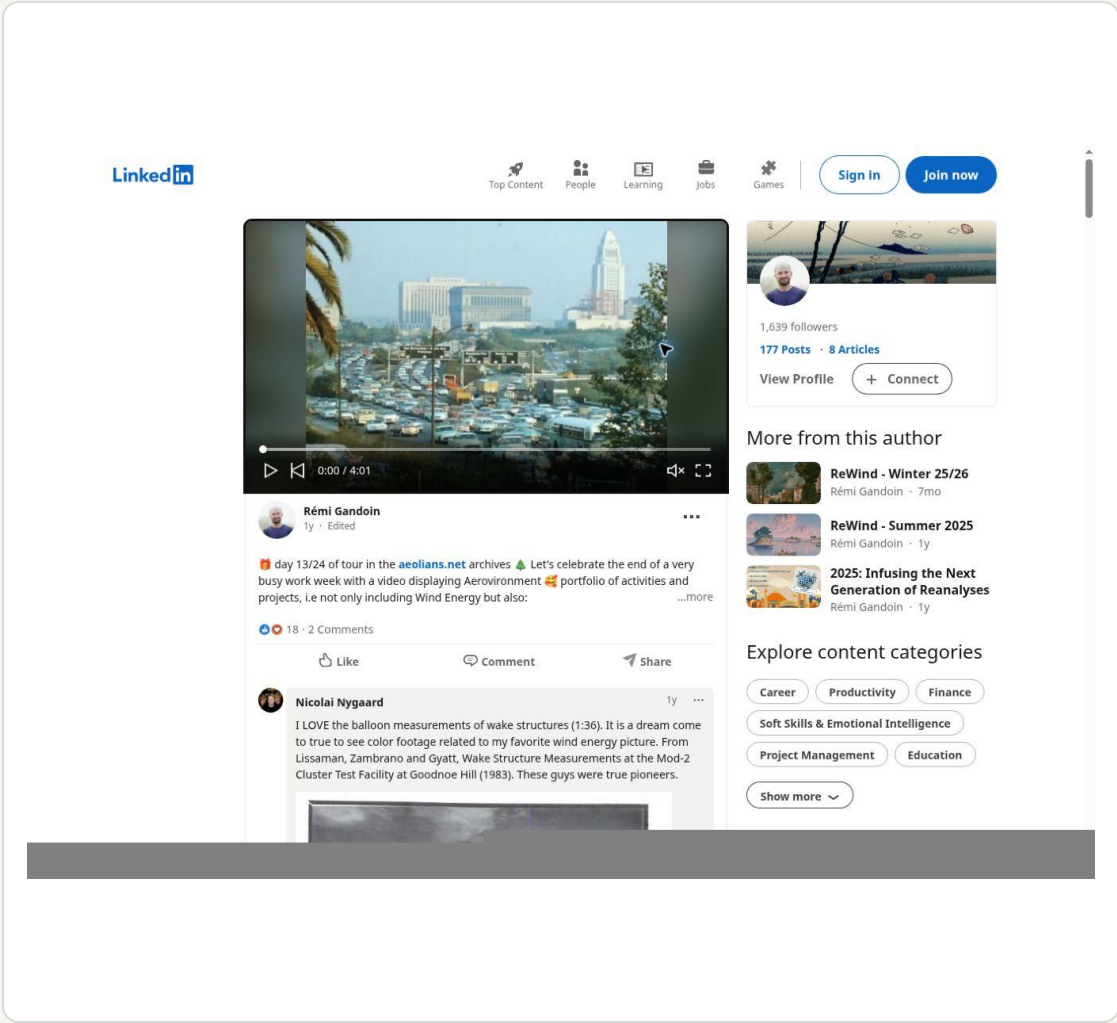


AeroVironment beyond wind energy

A historical film shows AeroVironment working across wind energy, aircraft tip vortices, air pollution and applied aerodynamics.

The portfolio illustrates how techniques and people moved between adjacent scientific and engineering fields.

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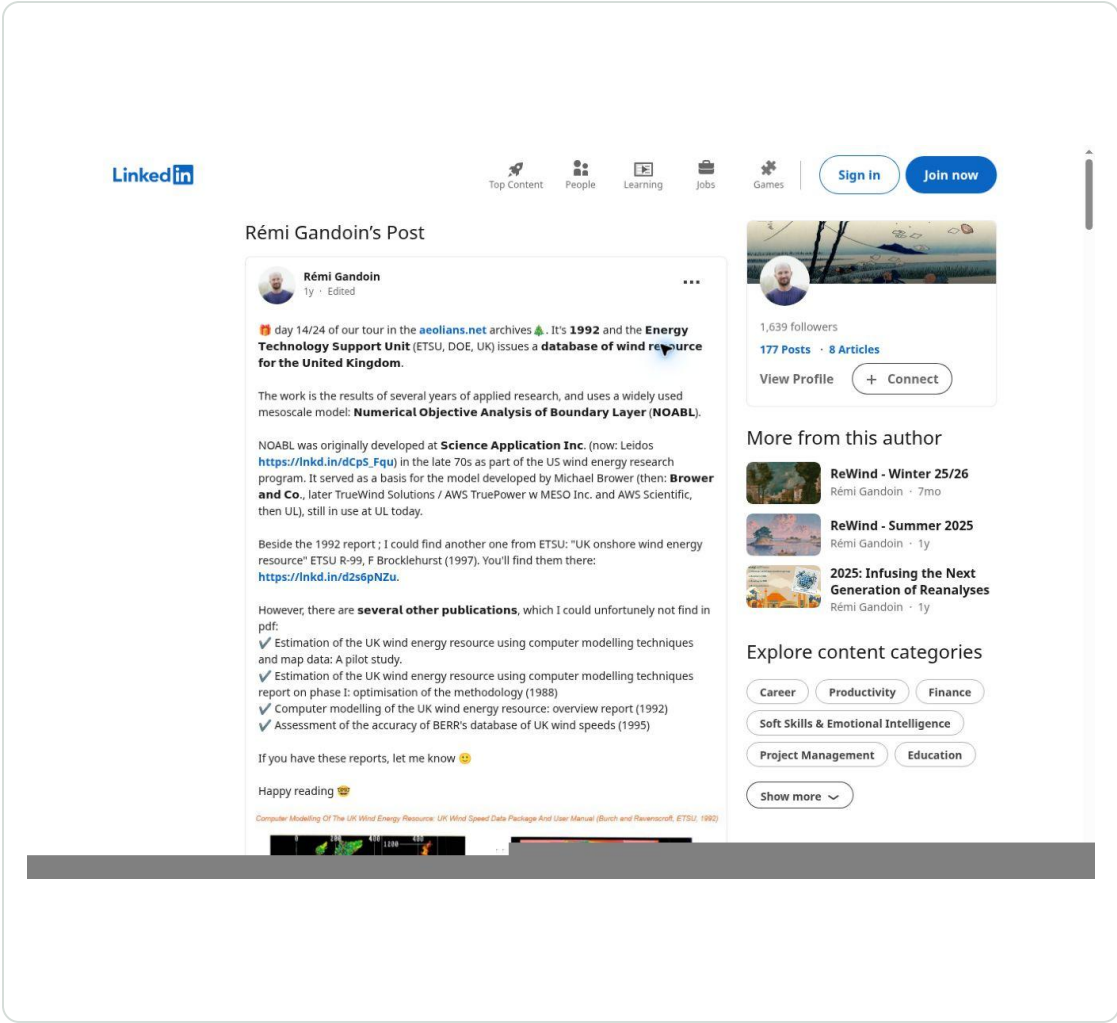


NOABL and the 1992 UK wind database

ETSU used the Numerical Objective Analysis of Boundary Layer model to build a national wind-resource database.

NOABL’s lineage connects US public R&D, UK resource mapping and later commercial mesoscale modelling.

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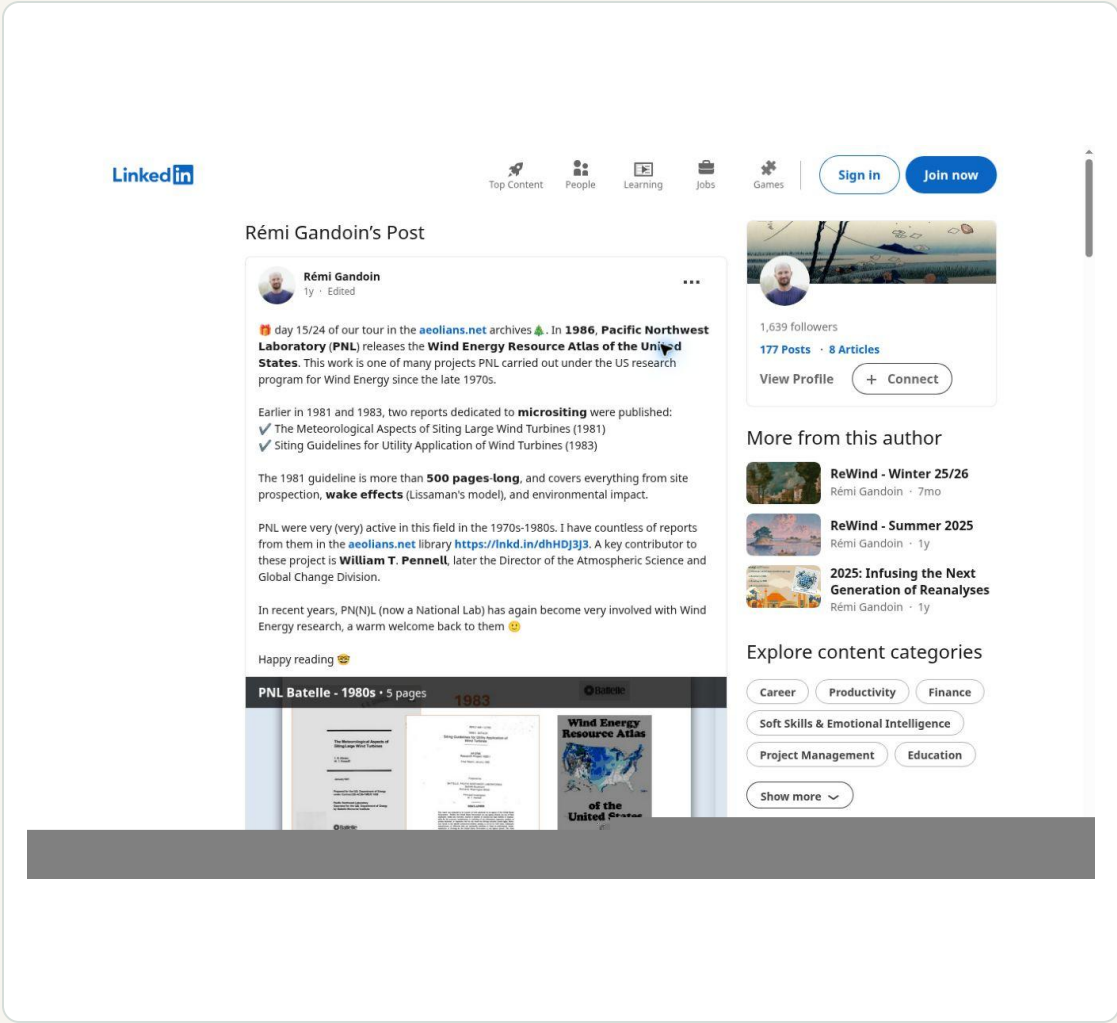


PNL's vast siting programme

Pacific Northwest Laboratory's 1986 US atlas followed major micrositing guides in 1981 and 1983—one exceeding 500 pages.

Public R&D covered prospecting, wakes and environmental impacts well before today's mature consulting practice.

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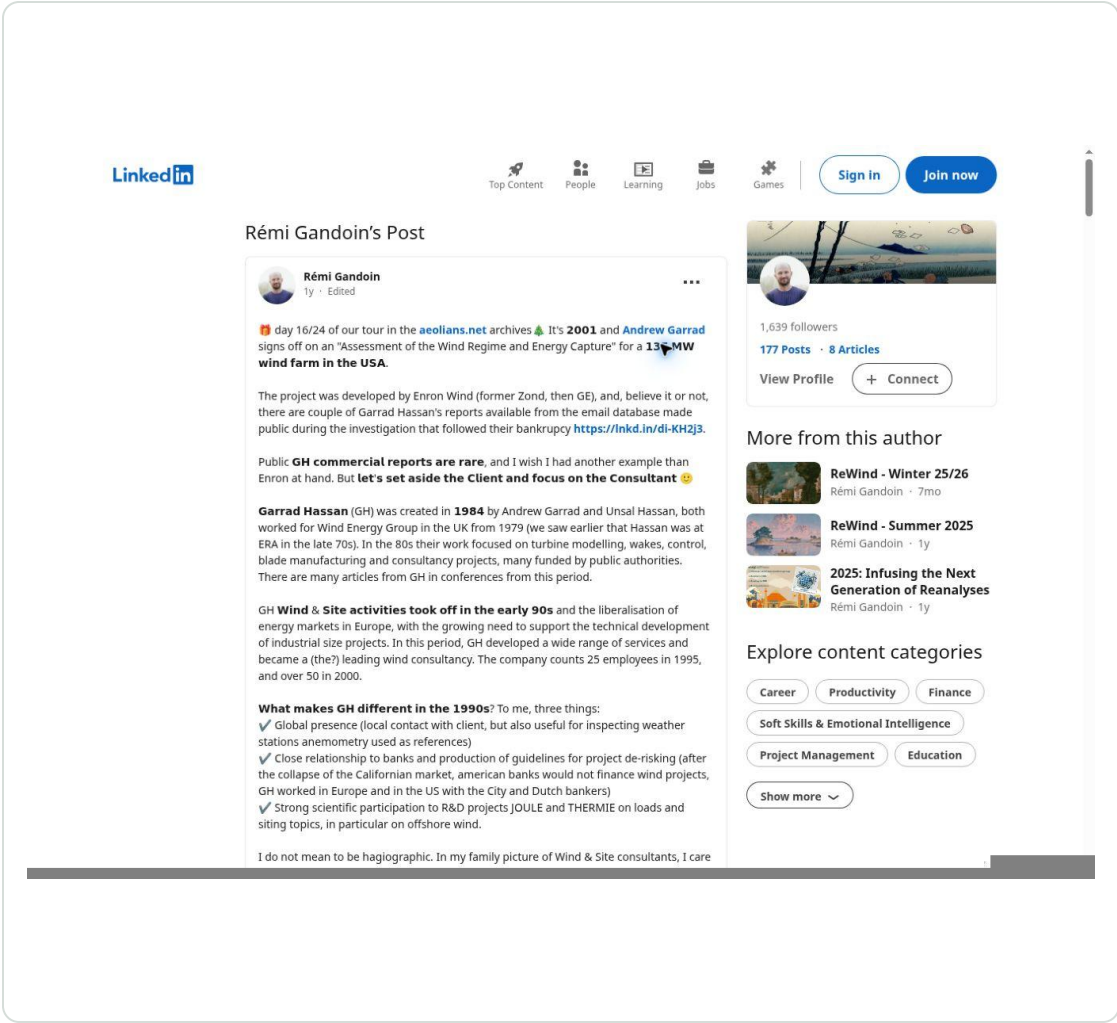


Garrad Hassan in the 1990s

GH expanded from turbine engineering into global Wind & Site consultancy as liberalised markets created demand for bankable projects.

Global presence, relationships with lenders and participation in JOULE/THERMIE projects made the firm distinctive.

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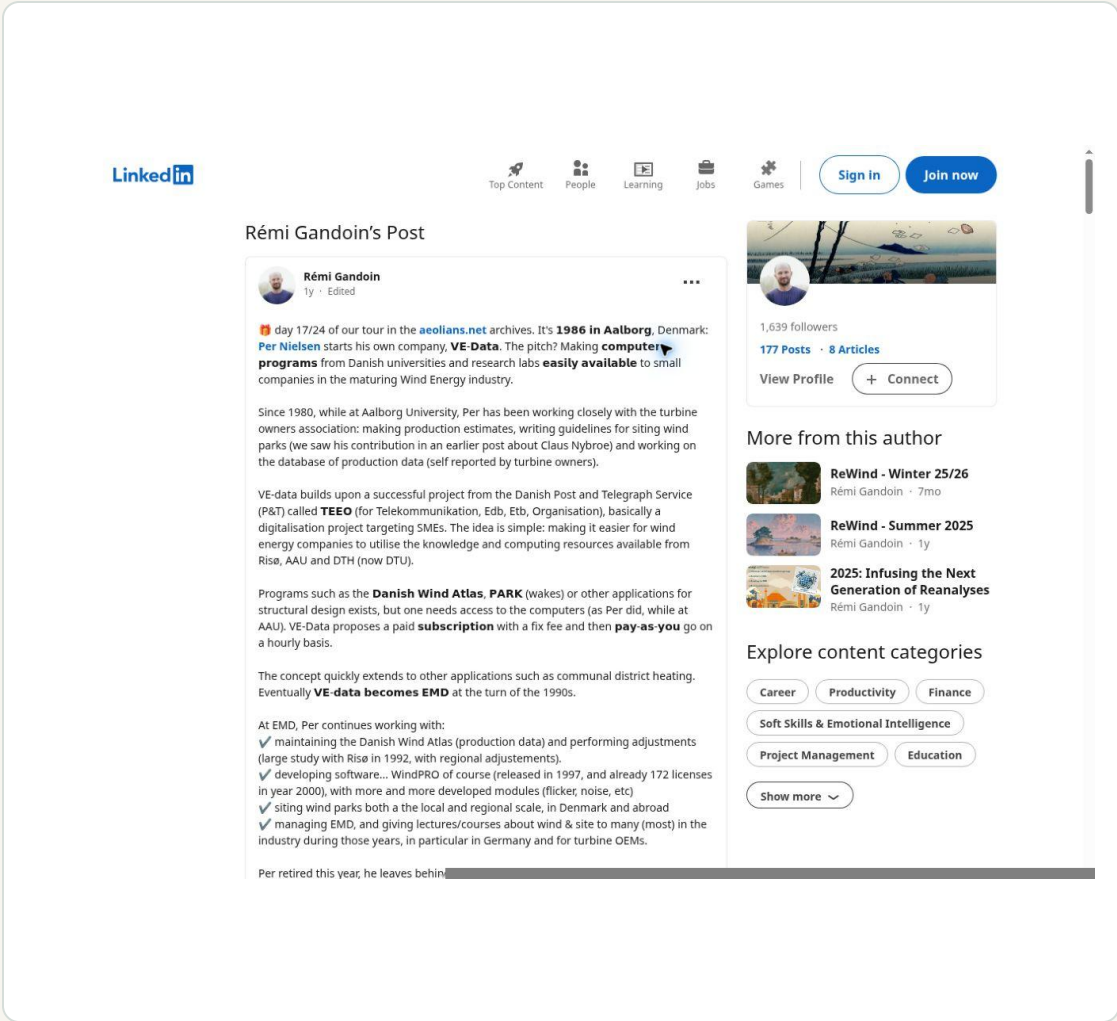


Per Nielsen, VE-Data and EMD

From 1986, VE-Data made university and laboratory software accessible to small wind companies; it later became EMD.

Production databases, the Danish Wind Atlas, PARK and windPRO helped turn shared knowledge into an industry-wide practice.

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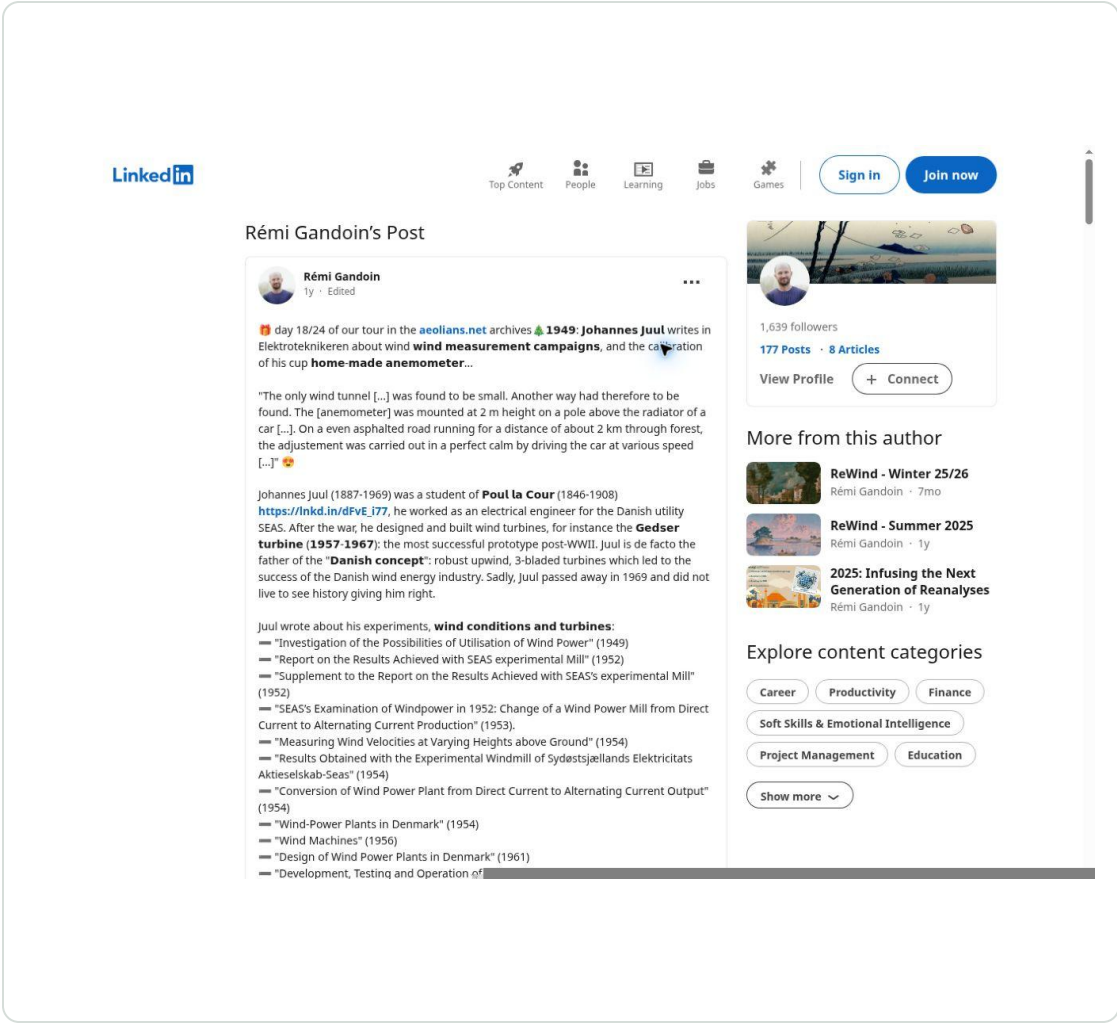


Johannes Juul measures the wind

Juul calibrated a homemade cup anemometer from a moving car and documented wind measurements from 1949 onward.

His field experiments and robust “Danish concept” connect measurement practice directly to turbine development.

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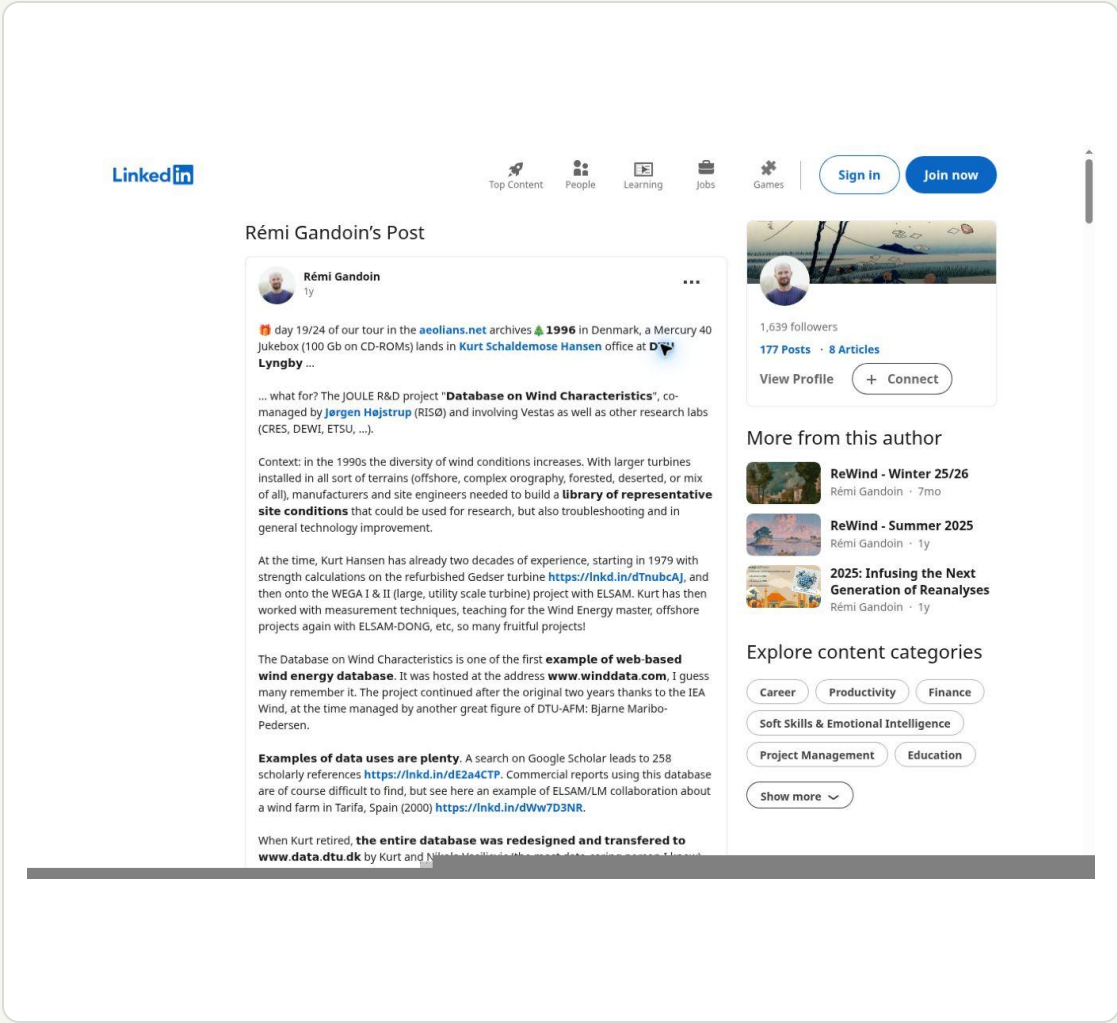


winddata.com: a shared data infrastructure

A 100 GB CD-ROM jukebox supported the 1996 JOULE Database on Wind Characteristics, later continued through IEA Wind.

Kurt Hansen and colleagues built an early web-based library of representative conditions, now preserved by DTU.

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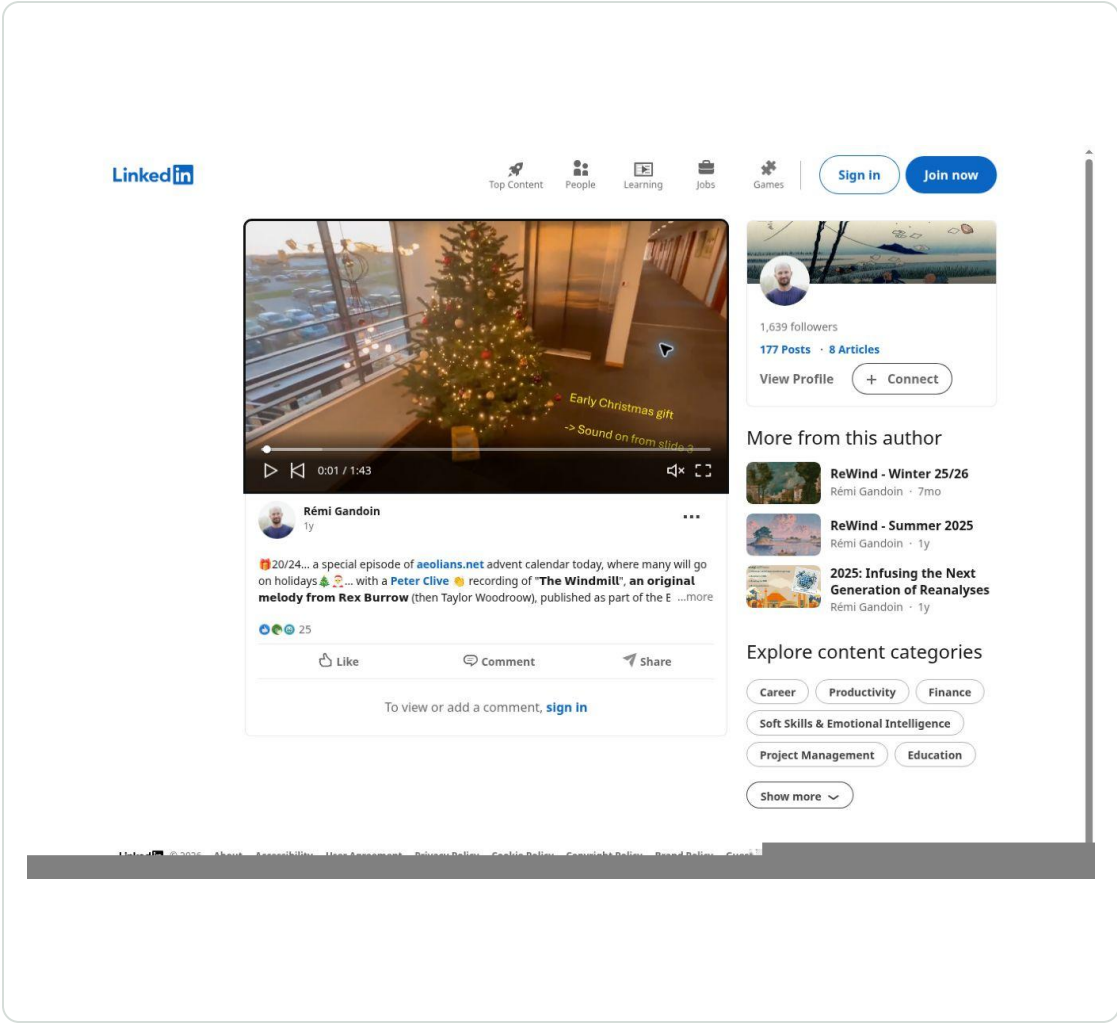


A musical interlude: “The Windmill”

Peter Clive recorded Rex Burrow’s melody, originally published for the 1982 BHRA wind-energy symposium in Stockholm.

The piece captures the community spirit and shared identity of wind-energy practitioners.

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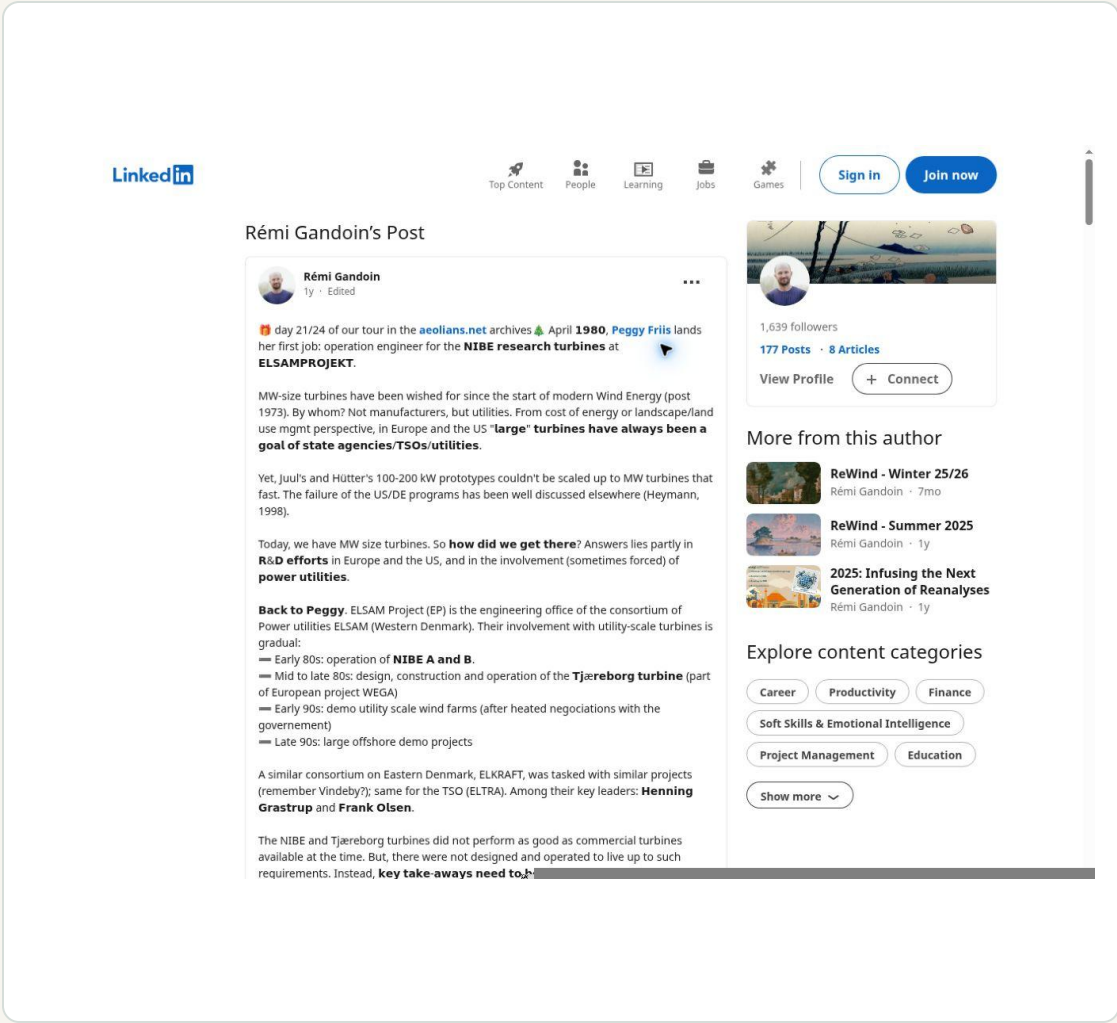


Utilities and the road to MW turbines

Peggy Friis joined ELSAMPROJEKT in 1980 to operate the NIBE research turbines; work continued through Tjæreborg, WEGA and offshore demonstrations.

Utility programmes helped validate aeroelastic tools and create the capabilities needed for commercial MW-scale projects.

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It is an open invitation to contribute siting studies, regional wind maps, power-curve reports and oral histories.

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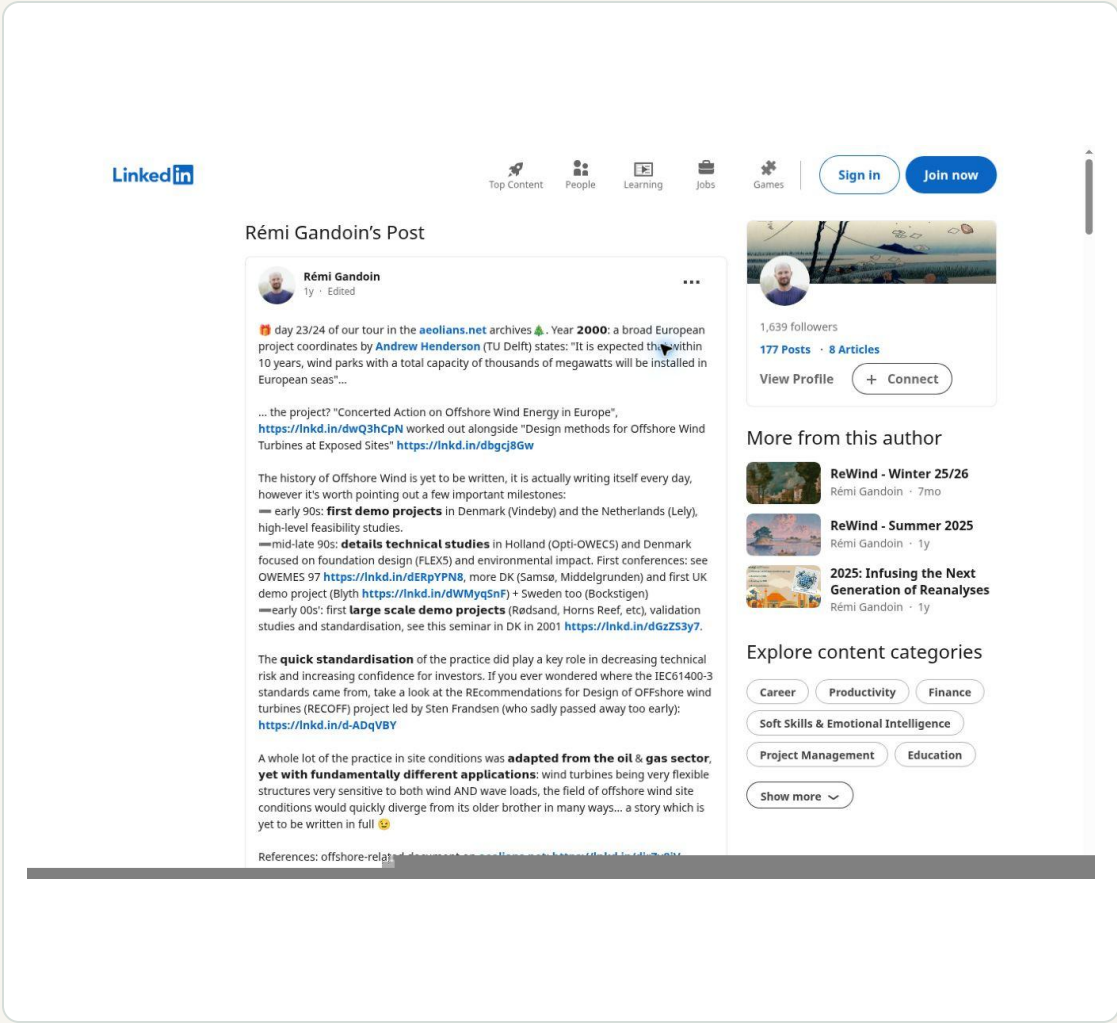


Offshore wind becomes a system

By 2000 European projects connected demonstrations, detailed design, environmental studies and standardisation.

RECOFF and related work helped de-risk flexible structures exposed to coupled wind and wave loading.

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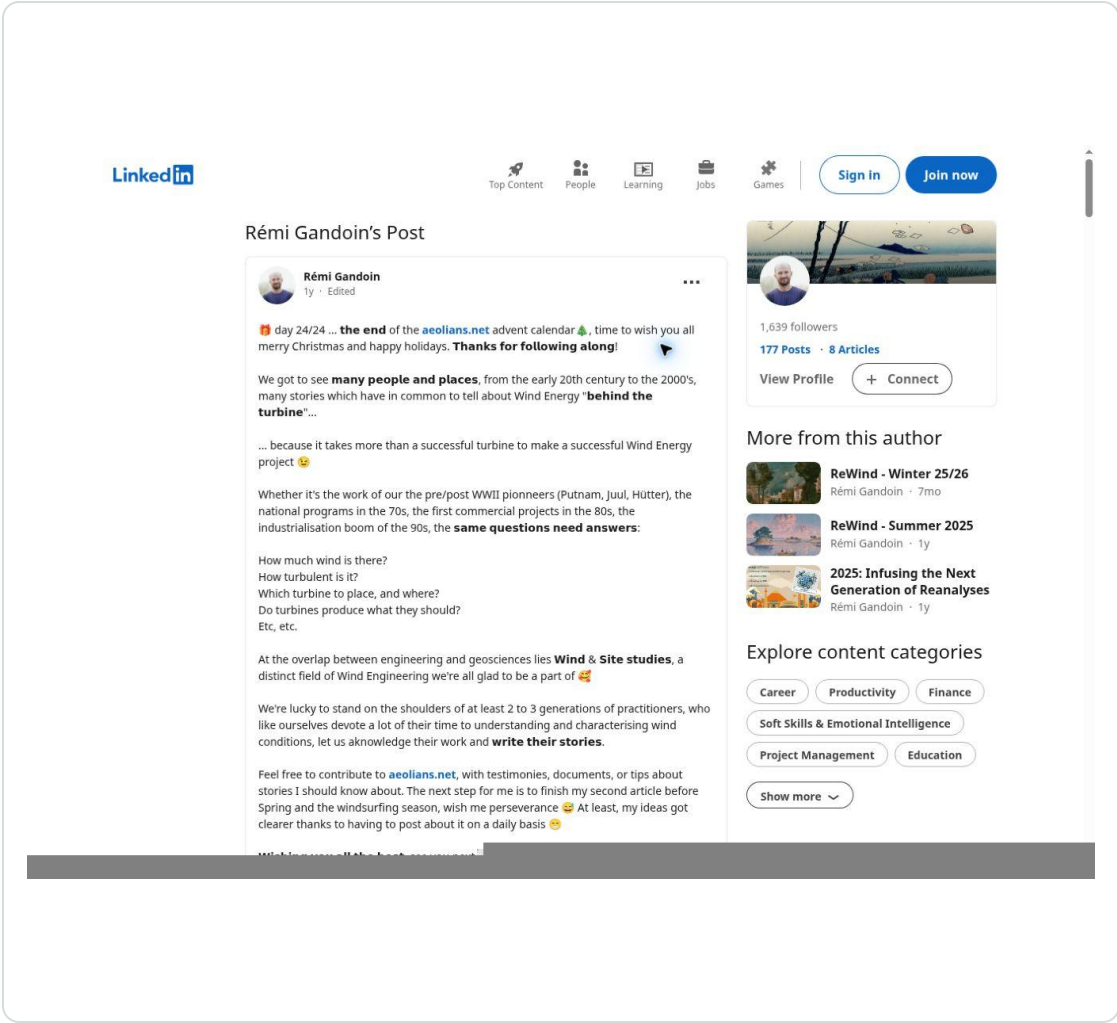


Behind the turbine

The final post returns to recurring questions: how much wind, how turbulent, which turbine, where, and whether production meets expectations.

Wind & Site is a distinct field built by generations of practitioners—and its history is still being written.

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THE THREAD THAT CONNECTS ALL 24 POSTS

It takes more than a turbine to make wind energy work.

Measurement · meteorology · modelling · siting · wakes · finance · standards · people

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