



# **SOUTH EASTERN EUROPEAN REGION OF CIGRÉ - SEERC RWG01**

**AUT - BIH - GRC - HRV - HUN - ITA - MKD - MNE - ROU - SRB - SVN - TUR - UKR**

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# Standardisation of Overhead Lines OHL in Austria

- **1913:** “Normalien für Freileitungen” in cooperation with VDE, main requirements for OHL
  - ice (rather high ice loads)
  - dimensions of poles
  - material of conductors Cu and Al, not Al/St
  - temperatures -5°C and Ice Load, max. temp. +40°C
  - bird protection against electric stroke on poles, discussed are perches for birds
  - wind 125 kg/m<sup>2</sup> – reduction of 50% for round surfaces
  - time to respond is only 2 weeks (by snail mail!)
- **1914:** “Sicherheitsvorschriften für elektrische Starkstromanlagen betreffend Freileitungen”, in cooperation with VDE
- **1929:** EVW 18 “Vorschriften für Freileitungen”



- **1943:** VDE 210/VIII.43 “Vorschriften für den Bau von Starkstrom-Freileitungen”
- **1950:** ÖVE-L1/1950
- **1956:** ÖVE-L1/1956
- **1967:** ÖVE-L11/1967
- **1979:** ÖVE-L11/1979 with amendments valid till 2006 (compulsory)
- Vilamoura procedure triggered by NL, APG contributed actively in the establishment of the new standard.
- **2001:** EN 50341-1:2001 → ÖVE/ÖNORM EN 50341:2002, AT-NNA were not available at this time
- **2010:** ÖVE/ÖNORM EN 50341:2010 consolidated version (included AT-NNAs)
- **2011:** EN 50341-1:2001 + A1:2009 → ÖVE/ÖNORM EN 50341:2011
- **2011:** ÖVE R1: 2011 “Richtlinie” consolidated version for AT and including actual clarifications
- **2012:** EN 50341: 2012 (December), AT-NNA were not available at this time
- **Since 2013** ÖVE Working Group “EN new” is working on the establishment of NNAs (not an easy job, so far 50 meetings)

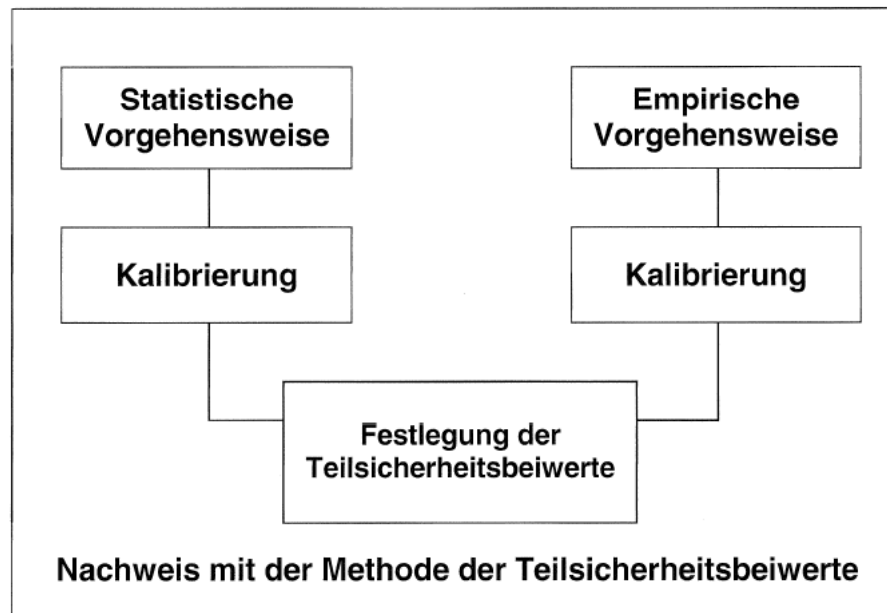


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Till (including) ÖVE EN 50341:2002 **empirical approach in AT.**

This standard allowed two approaches, i) the empirical/deterministic one based on a successful experience and tradition and ii) the probabilistic one.

AT decided for the empirical approach. In correlation with Eurocodes



With ÖVE EN 50341:2012 NNAs being elaborated now: **change to semiprobabilistic approach in AT.**

- Is based on wind forces from Austrian Standards
- Ice loads from empirical sources
- Mayor changes for low and medium voltage lines.
- Partial Load Factors to be applied.
- Needs much information for technicians

### **NNAs issued so far**

- Czech Republic, 63 pages
- Finland, 26 pages
- Germany, 90 pages
- Norway, 32 pages
- Poland, 72 pages
- Slovakia, 64 pages
- United Kingdom, 31 pages
- Sweden, 85 pages
- From Austria to be expected 2017, many pages.  
Comparative calculations necessary.



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