

Urban Scale Wind Energy: Viability and planning implications

Presented by:
Guy Watson, (BArch, MA)
Global Edge Project Consulting

Urban Scale Wind Energy



Introduction and key points:

1. 'Urban' scale generation

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Introduction and key points:

1. 'Urban' scale generation
2. Site Viability and Assessment

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Introduction and key points:

1. 'Urban' scale generation
2. Site Viability and Assessment
3. Market barriers and opportunities

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Introduction and key points:

1. 'Urban' scale generation
2. Site Viability and Assessment
3. Market barriers and opportunities
4. Conclusion

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1.0 Urban Scale Generation



Image courtesy of Aerogenesis

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1.0 Urban Scale Generation

- Urban context and size

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1.0 Urban Scale Generation

- Urban context and size



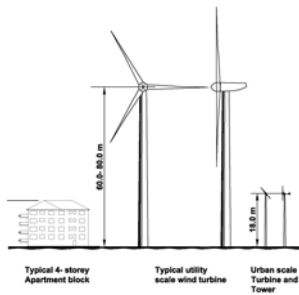
'Proven' turbines, in Wembley, UK

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1.0 Urban Scale Generation

- Urban context and size



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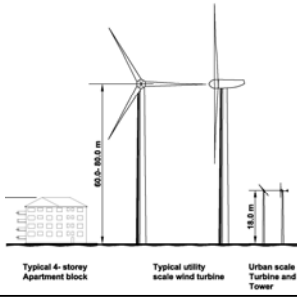
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1.0 Urban Scale Generation

- Urban context and size

Consistent in scale with:

- Lighting poles
- Trees and buildings



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1.0 Urban Scale Generation

- Urban context and size

SIZE AND OUTPUT			
Model	Output	Tower	Rotor

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1.0 Urban Scale Generation

- Urban context and size

SIZE AND OUTPUT			
Model	Output	Tower	Rotor
Aerogenesis	5kW	20m	6.0m



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1.0 Urban Scale Generation

- Urban context and size

SIZE AND OUTPUT

Model	Output	Tower	Rotor
Aerogenesis	5kW	20m	6.0m
Westwind	10kW	20m	6.0m



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1.0 Urban Scale Generation

- Urban context and size

SIZE AND OUTPUT

Model	Output	Tower	Rotor
Aerogenesis	5kW	20m	6.0m
Westwind	10kW	20m	6.0m
Proven	15kW	15m	9.0m



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1.0 Urban Scale Generation

- Urban context and size
- Building-mounted

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1.0 Urban Scale Generation

- Urban context and size
- Building-mounted



Images from Ropatec, Italy.

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2.0 Site Viability and Assessment

- Wind energy output
- Local amenity issues

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2.0 Site Viability and Assessment

- Wind energy output

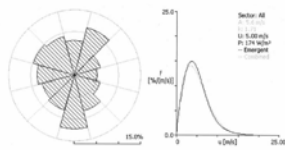


Figure 3 Wind rose and Weibull curve at T3

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2.0 Site Viability and Assessment

- Wind energy output

Assessment options:

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2.0 Site Viability and Assessment

- Wind energy output

Assessment options:

- Monitoring for 12 months

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2.0 Site Viability and Assessment

- Wind energy output

Assessment options:

- Monitoring for 12 months
- Contour modelling

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2.0 Site Viability and Assessment

- Wind energy output

Assessment options:

- Monitoring for 12 months
- Contour modelling
- Qualitative

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2.0 Site Viability and Assessment

- Wind energy output
- Local amenity issues

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2.0 Site Viability and Assessment

- Wind energy output
- Local amenity issues
 - Noise levels- testing

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2.0 Site Viability and Assessment

- Wind energy output
- Local amenity issues
 - Noise levels- testing
 - Noise levels- conclusions

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2.0 Site Viability and Assessment

- Wind energy output
- Local amenity issues
 - Noise levels- testing
 - Noise levels- conclusions
 - Aesthetics

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2.0 Site Viability and Assessment

- Wind energy output
- Local amenity issues
 - Noise levels- testing
 - Noise levels- conclusions
 - Aesthetics and urban scale
 - Birds and bats

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3.0 Market Barriers and Opportunities

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3.0 Market Barriers and Opportunities

- Imported products

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3.0 Market Barriers and Opportunities

- Imported products

LOCAL PRODUCTS
Aerogenesis
Hush
IMPORTED
Westwind
Proven
Quiet Revolution
Skystream
Ropatec

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3.0 Market Barriers and Opportunities

- Imported products
- Cost

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3.0 Market Barriers and Opportunities

- Imported products
- Cost

COST COMPARISON		
Model	Output	Cost
Aerogenesis	5kW	30K
Westwind	10kW	90K +
QR5	5kW	100K +

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3.0 Market Barriers and Opportunities

- Imported products
- Cost
- Low wind profile and known wind data

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3.0 Market Barriers and Opportunities

- Imported products
- Cost
- Low wind profile and known wind data
- Opportunities

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3.0 Market Barriers and Opportunities

- Imported products
- Cost
- Low wind profile and known wind data
- Opportunities
 - Lower production costs through higher outputs

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3.0 Market Barriers and Opportunities

- Imported products
- Cost
- Low wind profile and known wind data
- Opportunities
 - Lower production costs through higher outputs
 - Feed-in tariffs

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3.0 Market Barriers and Opportunities

- Imported products
- Cost
- Low wind profile and known wind data
- Opportunities
 - Lower production costs through higher outputs
 - Feed-in tariffs and higher power costs
 - Direct connections to buildings

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4.0 Conclusion

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4.0 Conclusion

- Interest from communities and councils

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4.0 Conclusion

- Interest from communities and councils
- Misperceptions about impacts

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4.0 Conclusion

- Interest from communities and councils
- Misperceptions about impacts
- Lower costs through better outputs

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4.0 Conclusion

- Interest from communities and councils
- Misperceptions about impacts
- Lower relative costs through higher outputs
- Local govt support is critical for community acceptance

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Thank you for your interest

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