

Distribution loss factors

(applying from 1 April 2023 to 31 March 2024)

This schedule provides the distribution loss factors for energy reconciliation that we are required to provide to the registry under the *Electricity Industry Participation Code*, Part 11, Schedule 11.1, Clause 22.

The distribution loss factor is a multiplier that is applied to the energy sales metered at the connection to calculate the volume of energy purchased at the grid exit point to supply that connection. This process makes allowance for energy that is ‘used up’ or ‘lost’ by the delivery system between the grid exit point and the connection.

The distribution loss factors shown below account for losses that are usually referred to as ‘technical losses’ in the industry. These technical losses arise from a number of factors but predominantly from the heating that occurs in transformers, lines and cables.

Within our loss factors we recognise differences in loss levels between 11kV metered and low voltage (LV) metered connections because the energy measured at 11kV-metered connections does not include losses from the distribution transformers and the LV lines and cables. We also consider and set specific loss factors for connections in our Large Capacity Connection category where specific assets are identified for our delivery service within our pricing model.

Other factors, such as differences between day and night and different times of year, have been considered but do not lead to significant differences within the accuracy of the overall loss factor determination. Geographic differences are also not distinguished on the basis of changes such as temporary network switching, transfer of ownership between Orion and Transpower, pockets of urban areas within rural areas and the progressive expansion of urban areas.

Our declared loss factors are:

Category	Loss code	Loss factors	
		Load (consumption)	Export (generation)
Low voltage metered connections (230V or 400V)	LVL	1.055	1.055
11kV metered connections	11L	1.025	1.025
Connection specific factors	SSL	1.029	1.029
	FSL	1.004	1.004

The applicable loss factor code applying for a connection is available from the Electricity Authority’s registry (for those with access) and is also available to look-up on our website at www.oriongroup.co.nz/SearchICP.

Distribution loss factors

(applying from 1 April 2022)

This schedule provides the distribution loss factors for energy reconciliation that we are required to provide to the registry under the *Electricity Industry Participation Code*, Part 11, Schedule 11.1, Clause 22.

The distribution loss factor is a multiplier that is applied to the energy sales metered at the connection to calculate the volume of energy purchased at the grid exit point to supply that connection. This process makes allowance for energy that is 'used up' or 'lost' by the delivery system between the grid exit point and the connection.

The distribution loss factors shown below account for losses that are usually referred to as 'technical losses' in the industry. These technical losses arise from a number of factors but predominantly from the heating that occurs in transformers, lines and cables.

Within our loss factors we recognise differences in loss levels between 11kV metered and low voltage (LV) metered connections because the energy measured at 11kV-metered connections does not include losses from the distribution transformers and the LV lines and cables. We also consider and set specific loss factors for connections in our Large Capacity Connection category where specific assets are identified for our delivery service within our pricing model.

Other factors, such as differences between day and night and different times of year, have been considered but do not lead to significant differences within the accuracy of the overall loss factor determination. Geographic differences are also not distinguished on the basis of changes such as temporary network switching, transfer of ownership between Orion and Transpower, pockets of urban areas within rural areas and the progressive expansion of urban areas.

Our declared loss factors are:

Category	Loss code	Loss factors	
		Load (consumption)	Export (generation)
Low voltage metered connections (230V or 400V)	LVL	1.055	1.055
11kV metered connections	11L	1.025	1.025
Connection	SSL	1.029	1.029
specific factors	FSL	1.004	1.004

The applicable loss factor code applying for a connection is available from the Electricity Authority's registry (for those with access) and is also available to look-up on our website at www.oriongroup.co.nz/SearchICP.

Distribution loss factors

(applying from 1 April 2021 to 31 March 2022)

This schedule provides the distribution loss factors for energy reconciliation that we are required to provide to the registry under the *Electricity Industry Participation Code*, Part 11, Schedule 11.1, Clause 22.

The distribution loss factor is a multiplier that is applied to the energy sales metered at the connection to calculate the volume of energy purchased at the grid exit point to supply that connection. This process makes allowance for energy that is ‘used up’ or ‘lost’ by the delivery system between the grid exit point and the connection.

The distribution loss factors shown below account for losses that are usually referred to as ‘technical losses’ in the industry. These technical losses arise from a number of factors but predominantly from the heating that occurs in transformers, lines and cables.

Within our loss factors we recognise differences in loss levels between 11kV metered and low voltage (LV) metered connections because the energy measured at 11kV-metered connections does not include losses from the distribution transformers and the LV lines and cables. We also consider and set specific loss factors for connections in our Large Capacity Connection category where specific assets are identified for our delivery service within our pricing model.

Other factors, such as differences between day and night and different times of year, have been considered but do not lead to significant differences within the accuracy of the overall loss factor determination. Geographic differences are also not distinguished on the basis of changes such as temporary network switching, transfer of ownership between Orion and Transpower, pockets of urban areas within rural areas and the progressive expansion of urban areas.

Our declared loss factors are:

Category	Loss code	Loss factors	
		Load (consumption)	Export (generation)
Low voltage metered connections (230V or 400V)	LVL	1.055	1.055
11kV metered connections	11L	1.025	1.025
Connection	SSL	1.029	1.029
specific factors	FSL	1.004	1.004

The applicable loss factor code applying for a connection is available from the Electricity Authority’s registry (for those with access) and is also available to look-up on our website at www.oriongroup.co.nz/SearchICP.

Distribution loss factors

(applying from 1 April 2020 to 31 March 2021)

This schedule provides the distribution loss factors for energy reconciliation that we are required to provide to the registry under the *Electricity Industry Participation Code*, Part 11, Schedule 11.1, Clause 22.

The distribution loss factor is a multiplier that is applied to the energy sales metered at the connection to calculate the volume of energy purchased at the grid exit point to supply that connection. This process makes allowance for energy that is ‘used up’ or ‘lost’ by the delivery system between the grid exit point and the connection.

The distribution loss factors shown below account for losses that are usually referred to as ‘technical losses’ in the industry. These technical losses arise from a number of factors but predominantly from the heating that occurs in transformers, lines and cables.

Within our loss factors we recognise differences in loss levels between 11kV metered and low voltage (LV) metered connections because the energy measured at 11kV-metered connections does not include losses from the distribution transformers and the LV lines and cables. We also consider and set specific loss factors for connections in our Large Capacity Connection category where specific assets are identified for our delivery service within our pricing model.

Other factors, such as differences between day and night and different times of year, have been considered but do not lead to significant differences within the accuracy of the overall loss factor determination. Geographic differences are also not distinguished on the basis of changes such as temporary network switching, transfer of ownership between Orion and Transpower, pockets of urban areas within rural areas and the progressive expansion of urban areas.

Our declared loss factors are:

Category	Loss code	Loss factors	
		Load (consumption)	Export (generation)
Low voltage metered connections (230V or 400V)	LVL	1.055	1.055
11kV metered connections	11L	1.025	1.025
Connection	SSL	1.029	1.029
specific factors	FSL	1.004	1.004

The applicable loss factor code applying for a connection is available from the Electricity Authority’s registry (for those with access) and is also available to look-up on our website at www.oriongroup.co.nz/SearchICP.



Distribution loss factors

(applying from 1 April 2019 to 31 March 2020)

This schedule provides the distribution loss factors for energy reconciliation that we are required to provide to the registry under the *Electricity Industry Participation Code*, Part 11, Schedule 11.1, Clause 22.

The distribution loss factor is a multiplier that is applied to the energy sales metered at the connection to calculate the volume of energy purchased at the grid exit point to supply that connection. This process makes allowance for energy that is 'used up' or 'lost' by the delivery system between the grid exit point and the connection.

The distribution loss factors shown below account for losses that are usually referred to as 'technical losses' in the industry. These technical losses arise from a number of factors but predominantly from the heating that occurs in transformers, lines and cables.

Within our loss factors we recognise differences in loss levels between 11kV metered and low voltage (LV) metered connections because the energy measured at 11kV-metered connections does not include losses from the distribution transformers and the LV lines and cables. We also consider and set specific loss factors for connections in our Large Capacity Connection category where specific assets are identified for our delivery service within our pricing model.

Other factors, such as differences between day and night and different times of year, have been considered but do not lead to significant differences within the accuracy of the overall loss factor determination. Geographic differences are also not distinguished on the basis of changes such as temporary network switching, transfer of ownership between Orion and Transpower, pockets of urban areas within rural areas and the progressive expansion of urban areas.

Our declared loss factors are:

Category	Loss code	Loss factors	
		Load (consumption)	Export (generation)
Low voltage metered connections (230V or 400V)	LVL	1.055	1.055
11kV metered connections	11L	1.025	1.025
Connection specific factors	SSL	1.029	1.029
	FSL	1.004	1.004

The applicable loss factor code applying for a connection is available from the Electricity Authority's registry (for those with access) and is also available to look-up on our website at www.oriongroup.co.nz/SearchICP.



Distribution loss factors

(applying from 1 April 2018 to 31 March 2019)

This schedule provides the distribution loss factors for energy reconciliation that we are required to provide to the registry under the *Electricity Industry Participation Code*, Part 11, Schedule 11.1, Clause 22.

The distribution loss factor is a multiplier that is applied to the energy sales metered at the connection to calculate the volume of energy purchased at the grid exit point to supply that connection. This process makes allowance for energy that is 'used up' or 'lost' by the delivery system between the grid exit point and the connection.

The distribution loss factors shown below account for losses that are usually referred to as 'technical losses' in the industry. These technical losses arise from a number of factors but predominantly from the heating that occurs in transformers, lines and cables.

Within our loss factors we recognise differences in loss levels between 11kV metered and low voltage (LV) metered connections because the energy measured at 11kV-metered connections does not include losses from the distribution transformers and the LV lines and cables. We also consider and set specific loss factors for connections in our Large Capacity Connection category where specific assets are identified for our delivery service within our pricing model.

Other factors, such as differences between day and night and different times of year, have been considered but do not lead to significant differences within the accuracy of the overall loss factor determination. Geographic differences are also not distinguished on the basis of changes such as temporary network switching, transfer of ownership between Orion and Transpower, pockets of urban areas within rural areas and the progressive expansion of urban areas.

Our declared loss factors are:

Category	Loss code	Loss factors	
		Load (consumption)	Export (generation)
Low voltage metered connections (230V or 400V)	LVL	1.055	1.055
11kV metered connections	11L	1.025	1.025
Connection	SSL	1.029	1.029
specific factors	FSL	1.004	1.004

The applicable loss factor code applying for a connection is available from the Electricity Authority's registry (for those with access) and is also available to look-up on our website at www.oriongroup.co.nz/SearchICP.

Distribution loss factors

(applying from 1 April 2017 to 31 March 2018)

This schedule provides the distribution loss factors for energy reconciliation that we are required to provide to the registry under the *Electricity Industry Participation Code*, Part 11, Schedule 11.1, Clause 22.

The distribution loss factor is a multiplier that is applied to the energy sales metered at the connection to calculate the volume of energy purchased at the grid exit point to supply that connection. This process makes allowance for energy that is 'used up' or 'lost' by the delivery system between the grid exit point and the connection.

The distribution loss factors shown below account for losses that are usually referred to as 'technical losses' in the industry. These technical losses arise from a number of factors but predominantly from the heating that occurs in transformers, lines and cables.

Within our loss factors we recognise differences in loss levels between 11kV metered and low voltage (LV) metered connections because the energy measured at 11kV-metered connections does not include losses from the distribution transformers and the LV lines and cables. We also consider and set specific loss factors for connections in our Large Capacity Connection category where specific assets are identified for our delivery service within our pricing model.

Other factors, such as differences between day and night and different times of year, have been considered but do not lead to significant differences within the accuracy of the overall loss factor determination. Geographic differences are also not distinguished on the basis of changes such as temporary network switching, transfer of ownership between Orion and Transpower, pockets of urban areas within rural areas and the progressive expansion of urban areas.

Our declared loss factors are:

Category	Loss code	Loss factors	
		Load (consumption)	Export (generation)
Low voltage metered connections (230V or 400V)	LVL	1.055	1.055
11kV metered connections	11L	1.025	1.025
Connection	SSL	1.029	1.029
specific factors	FSL	1.004	1.004

The applicable loss factor code applying for a connection is available from the Electricity Authority's registry (for those with access) and is also available to look-up on our website at www.oriongroup.co.nz/SearchICP.

Distribution loss factors

(applying from 1 April 2016 to 31 March 2017)



This schedule provides the distribution loss factors for energy reconciliation that we are required to provide to the registry under the *Industry Participation Code*, Part 11, Schedule 11.1, Clause 22.

The *distribution loss factor* is a multiplier that is applied to the energy sales metered at the connection to calculate the volume of energy purchased at the grid exit point to supply that connection. This process makes allowance for energy that is 'used up' or 'lost' by the delivery system between the grid exit point and the connection.

The distribution loss factors shown below account for losses that are usually referred to as 'technical losses' in the industry. These technical losses arise from a number of factors but predominantly from the heating that occurs in transformers, lines and cables.

Within our loss factors we recognise differences in loss levels between 11kV metered and low voltage (LV) metered connections because the energy measured at 11kV-metered connections does not include losses from the distribution transformers and the LV lines and cables. We also consider and set specific loss factors for connections in our Large Capacity Connection category where specific assets are identified for our delivery service within our pricing model.

Other factors, such as differences between day and night and different times of year, have been considered but do not lead to significant differences within the accuracy of the overall loss factor determination. Geographic differences are also not distinguished on the basis of changes such as temporary network switching, transfer of ownership between Orion and Transpower, pockets of urban areas within rural areas and the progressive expansion of urban areas.

Our declared loss factors are:

Category	Loss code	Loss factors	
		Load (consumption)	Export (generation)
Low voltage metered connections (230V or 400V)	LVL	1.055	1.055
11kV metered connections	11L	1.025	1.025
Connection	SSL	1.029	1.029
specific factors	FSL	1.004	1.004

The applicable loss factor code applying for a connection is available from the Electricity Authority's registry (for those with access) and is also available to look-up on our website at www.oriongroup.co.nz/SearchICP.

Distribution loss factors

(applying from 1 April 2015 to 31 March 2016)



This schedule provides the distribution loss factors for energy reconciliation that we are required to provide to the registry under the *Industry Participation Code*, Part 11, Schedule 11.1, Clause 22.

The *distribution loss factor* is a multiplier that is applied to the energy sales metered at the connection to calculate the volume of energy purchased at the grid exit point to supply that connection. This process makes allowance for energy that is 'used up' or 'lost' by the delivery system between the grid exit point and the connection.

The distribution loss factors shown below account for losses that are usually referred to as 'technical losses' in the industry. These technical losses arise from a number of factors but predominantly from the heating that occurs in transformers, lines and cables.

Within our loss factors we recognise differences in loss levels between 11kV metered and low voltage (LV) metered connections because the energy measured at 11kV-metered connections does not include losses from the distribution transformers and the LV lines and cables. We also consider and set specific loss factors for connections in our Large Capacity Connection category where specific assets are identified for our delivery service within our pricing model.

Other factors, such as differences between day and night and different times of year, have been considered but do not lead to significant differences within the accuracy of the overall loss factor determination. Geographic differences are also not distinguished on the basis of changes such as temporary network switching, transfer of ownership between Orion and Transpower, pockets of urban areas within rural areas and the progressive expansion of urban areas.

Our declared loss factors are:

Category	Loss code	Loss factors	
		Load (consumption)	Export (generation)
Low voltage metered connections (230V or 400V)	LVL	1.055	1.055
11kV metered connections	11L	1.025	1.025
Connection	SSL	1.029	1.029
specific factors	FSL	1.004	1.004

The applicable loss factor code applying for a connection is available from the Electricity Authority's registry (for those with access) and is also available to look-up on our website at:

<http://www.oriongroup.co.nz/your-network/retailers/search-icp.aspx>.

Distribution loss factors

(applying from 1 April 2014 to 31 March 2015)



This schedule provides the distribution loss factors for energy reconciliation that we are required to provide to the registry under the *Industry Participation Code*, Part 11, Schedule 11.1, Clause 22.

The *distribution loss factor* is a multiplier that is applied to the energy sales metered at the connection to calculate the volume of energy purchased at the grid exit point to supply that connection. This process makes allowance for energy that is 'used up' or 'lost' by the delivery system between the grid exit point and the connection.

The distribution loss factors shown below account for losses that are usually referred to as 'technical losses' in the industry. These technical losses arise from a number of factors but predominantly from the heating that occurs in transformers, lines and cables.

Within our loss factors we recognise differences in loss levels between 11kV metered and low voltage (LV) metered connections because the energy measured at 11kV-metered connections does not include losses from the distribution transformers and the LV lines and cables. We also consider and set specific loss factors for connections in our Large Capacity Connection category where specific assets are identified for our delivery service within our pricing model.

Other factors, such as differences between day and night and different times of year, have been considered but do not lead to significant differences within the accuracy of the overall loss factor determination. Geographic differences are also not distinguished on the basis of changes such as temporary network switching, transfer of ownership between Orion and Transpower, pockets of urban areas within rural areas and the progressive expansion of urban areas.

Our declared loss factors are:

Category	Loss code	Loss factors	
		Load (consumption)	Export (generation)
Low voltage metered connections (230V or 400V)	LVL	1.055	1.055
11kV metered connections	11L	1.025	1.025
Connection	SSL	1.029	1.029
specific factors	FSL	1.004	1.004

The applicable loss factor code applying for a connection is available from the Electricity Authority's registry (for those with access) and is also available to look-up on our website at:

<http://www.oriongroup.co.nz/your-network/retailers/search-icp.aspx>.

Distribution loss factors

(applying from 1 July 2013 to 31 March 2014)



This schedule provides the distribution loss factors for energy reconciliation that we are required to provide to the registry under the *Industry Participation Code*, Part 11, Schedule 11.1, Clause 22.

The *distribution loss factor* is a multiplier that is applied to the energy sales metered at the connection to calculate the volume of energy purchased at the grid exit point to supply that connection. This process makes allowance for energy that is 'used up' or 'lost' by the delivery system between the grid exit point and the connection.

The distribution loss factors shown below account for losses that are usually referred to as 'technical losses' in the industry. These technical losses arise from a number of factors but predominantly from the heating that occurs in transformers, lines and cables.

Within our loss factors we recognise differences in loss levels between 11kV metered and low voltage (LV) metered connections because the energy measured at 11kV-metered connections does not include losses from the distribution transformers and the LV lines and cables. We also consider and set specific loss factors for connections in our Large Capacity Connection category where specific assets are identified for our delivery service within our pricing model.

Other factors, such as differences between day and night and different times of year, have been considered but do not lead to significant differences within the accuracy of the overall loss factor determination. Geographic differences are also not distinguished on the basis of changes such as temporary network switching, transfer of ownership between Orion and Transpower, pockets of urban areas within rural areas and the progressive expansion of urban areas.

Our declared loss factors are:

Category	Loss code	Loss factors	
		Load (consumption)	Export (generation)
Low voltage metered connections (230V or 400V)	LVL	1.055	1.055
11kV metered connections	11L	1.025	1.025
Connection	SSL	1.035	1.035
specific factors	FSL	1.004	1.004

The applicable loss factor code applying for a connection is available from the Electricity Authority's registry (for those with access) and is also available to look-up on our website at:

<http://www.oriongroup.co.nz/your-network/retailers/search-icp.aspx>.

Distribution loss factors

(applying from 1 April 2013 to 30 June 2013)



This schedule provides the distribution loss factors for energy reconciliation that we are required to provide to the registry under the *Industry Participation Code*, Part 11, Schedule 11.1, Clause 22.

The *distribution loss factor* is a multiplier that is applied to the energy sales metered at the connection to calculate the volume of energy purchased at the grid exit point to supply that connection. This process makes allowance for energy that is 'used up' or 'lost' by the delivery system between the grid exit point and the connection.

The distribution loss factors shown below account for losses that are usually referred to as 'technical losses' in the industry. These technical losses arise from a number of factors but predominantly from the heating that occurs in transformers, lines and cables.

Within our loss factors we recognise differences in loss levels between 11kV metered and low voltage (LV) metered connections because the energy measured at 11kV-metered connections does not include losses from the distribution transformers and the LV lines and cables. We also consider and set specific loss factors for connections in our Large Capacity Connection category where specific assets are identified for our delivery service within our pricing model.

Other factors, such as differences between day and night and different times of year, have been considered but do not lead to significant differences within the accuracy of the overall loss factor determination. Geographic differences are also not distinguished on the basis of changes such as temporary network switching, transfer of ownership between Orion and Transpower, pockets of urban areas within rural areas and the progressive expansion of urban areas.

Our declared loss factors are:

Category	Loss code	Loss factors	
		Load (consumption)	Export (generation)
Low voltage metered connections (230V or 400V)	LVL	1.055	1.055
11kV metered connections	11L	1.025	1.025
Connection	SSL	1.035	1.035
specific factors	FSL	1.026	1.026

The applicable loss factor code applying for a connection is available from the Electricity Authority's registry (for those with access) and is also available to look-up on our website at:

<http://www.oriongroup.co.nz/your-network/retailers/search-icp.aspx>.

Distribution loss factors

(reissued to apply from 1 April 2012 to 31 March 2013)



This schedule provides the distribution loss factors for energy reconciliation that we are required to provide to the registry under the *Industry Participation Code*, Part 11, Schedule 11.1, Clause 22.

The *distribution loss factor* is a multiplier that is applied to the energy sales metered at the connection to calculate the volume of energy purchased at the grid exit point to supply that connection. This process makes allowance for energy that is 'used up' or 'lost' by the delivery system between the grid exit point and the connection. Mathematically, loss factor = $1/(1-\text{loss ratio})$ where *loss ratio* is the proportion of energy purchases that are 'used up' or 'lost' and it is this ratio that is usually published for distribution networks.

The distribution loss factors shown below only account for losses that are usually referred to as 'technical losses' in the industry. These technical losses arise from a number of factors but predominantly from the heating that occurs in transformers, lines and cables. We recognise significant differences in loss levels in different situations as follows:

- 11kV-metered versus LV-metered connections because the energy measured at 11kV-metered connections does not include losses from the distribution transformers and the LV lines and cables, which are downstream from the 11kV meter; and
- Urban versus rural parts of our network because the differences in their loading densities and network design result in significantly different loss levels.

Consequently, we have different loss factors to distinguish between these situations, as follows:

Metering at connection	Loss code	Loss factors	
		Load (consumption)	Export (generation)
<i>Urban GXP</i> s			
LV - metered	ULV	1.051	1.051
11kV - metered	U11	1.022	1.022
<i>Rural GXP</i> s			
LV - metered	RLV	1.067	1.067
11kV - metered	R11	1.053	1.053

Note

Urban grid exit points are ADD0111, ADD0661, BRY0111, BRY0661, ISL0331, ISL0661, MLN0661, MLN0664, PAP0111, and PAP0661.

Rural grid exit points are APS0111, CLH0111, COL0111, HOR0331, HOR0661, SPN0331, and SPN0661.

Distribution loss factors

(reissued to apply from 1 April 2011 to 31 March 2012)
(no change to loss factors)



This schedule provides the distribution loss factors for energy reconciliation that we are required to provide to the registry under the *Industry Participation Code*, Part 11, Schedule 11.1, Clause 22.

The *distribution loss factor* is a multiplier that is applied to the energy sales metered at the connection to calculate the volume of energy purchased at the grid exit point to supply that connection. This process makes allowance for energy that is 'used up' or 'lost' by the delivery system between the grid exit point and the connection. Mathematically, loss factor = $1/(1-\text{loss ratio})$ where *loss ratio* is the proportion of energy purchases that are 'used up' or 'lost' and it is this ratio that is usually published for distribution networks.

The distribution loss factors shown below only account for losses that are usually referred to as 'technical losses' in the industry. These technical losses arise from a number of factors but predominantly from the heating that occurs in transformers, lines and cables. We recognise significant differences in loss levels in different situations as follows:

- 11kV-metered versus LV-metered connections because the energy measured at 11kV-metered connections does not include losses from the distribution transformers and the LV lines and cables, which are downstream from the 11kV meter; and
- Urban versus rural parts of our network because the differences in their loading densities and network design result in significantly different loss levels.

Consequently, we have different loss factors to distinguish between these situations, as follows:

Metering at connection	Loss code	Loss factors	
		Load (consumption)	Export (generation)
<i>Urban GXP</i> s			
LV - metered	ULV	1.051	1.051
11kV - metered	U11	1.022	1.022
<i>Rural GXP</i> s			
LV - metered	RLV	1.067	1.067
11kV - metered	R11	1.053	1.053

Note

Urban grid exit points are ADD0111, ADD0661, BRY0111, BRY0661, ISL0331, ISL0661, MLN0661, MLN0664, PAP0111, and PAP0661.

Rural grid exit points are APS0111, CLH0111, COL0111, HOR0331, HOR0661, SPN0331, and SPN0661.

Distribution loss factors

(applying from 1 April 2009)

(reissued without change from 1 April 2010 to 31 March 2011)

This schedule provides the distribution loss factors for energy reconciliation that we are required to provide to the registry under the *Electricity Governance Rules*, Part E, Schedule E1, rule 5.

The *distribution loss factor* is a multiplier that is applied to the energy sales metered at the connection to calculate the volume of energy purchased at the grid exit point to supply that connection. This process makes allowance for energy that is 'used up' or 'lost' by the delivery system between the grid exit point and the connection. Mathematically, loss factor = $1/(1-\text{loss ratio})$ where *loss ratio* is the proportion of energy purchases that are 'used up' or 'lost' and it is this ratio that is usually published for distribution networks.

The distribution loss factors shown below only account for losses that are usually referred to as 'technical losses' in the industry. These technical losses arise from a number of factors but predominantly from the heating that occurs in transformers, lines and cables. We recognise significant differences in loss levels in different situations as follows:

- 11kV-metered versus LV-metered connections because the energy measured at 11kV-metered connections does not include losses from the distribution transformers and the LV lines and cables, which are downstream from the 11kV meter; and
- Urban versus rural parts of our network because the differences in their loading densities and network design result in significantly different loss levels.

Consequently, we have different loss factors to distinguish between these situations, as follows:

Metering at connection	Loss code	Loss factors	
		Load (consumption)	Export (generation)
<i>Urban GXPs</i>			
LV - metered	ULV	1.051	1.051
11kV - metered	U11	1.022	1.022
<i>Rural GXPs</i>			
LV - metered	RLV	1.067	1.067
11kV - metered	R11	1.053	1.053

Note

Urban grid exit points are ADD0111, ADD0661, BRY0111, BRY0661, ISL0331, ISL0661, MLN0661, MLN0664, PAP0111, and PAP0661.

Rural grid exit points are APS0111, CLH0111, COL0111, HOR0331, HOR0661, SPN0331, and SPN0661.

Distribution loss factors

(applying from 1 April 2009)

This schedule provides the distribution loss factors for energy reconciliation that we are required to provide to the registry under the *Electricity Governance Rules*, Part E, Schedule E1, rule 5.

The *distribution loss factor* is a multiplier that is applied to the energy sales that are metered at the connection to calculate the volume of energy purchased at the grid exit point to supply that connection. This process makes allowance for energy that is 'used up' or 'lost' by the delivery system between the grid exit point and the connection. Mathematically, loss factor = $1/(1-\text{Loss Ratio})$ where *loss ratio* is the proportion of energy purchases that are 'used up' or 'lost' and it is this ratio that is usually published for distribution networks.

The distribution loss factors shown below only account for losses that are usually referred to as 'technical losses' in the industry. These technical losses arise from a number of factors but predominantly from the heating that occurs in transformers, lines and cables. We recognise significant differences in loss levels in different situations as follows:

- 11kV-metered versus LV-metered connections because the energy measured at 11kV-metered connections does not include losses from the distribution transformers and the LV lines and cables, which are downstream from the 11kV meter; and
- Urban versus rural parts of our network because the differences in their loading densities and network design result in significantly different loss levels.

Consequently, we have different loss factors to distinguish between these situations, as follows:

Metering at connection	Loss code	Loss factors	
		Load (consumption)	Export (generation)
<i>Urban GXPs</i>			
LV-metered	ULV	1.051	1.051
11kV-metered	U11	1.022	1.022
<i>Rural GXPs</i>			
LV-metered	RLV	1.067	1.067
11kV-metered	R11	1.053	1.053

Note

Urban grid exit points are ADD0111, ADD0661, BRY0111, BRY0661, ISL0331, ISL0661, MLN0661, MLN0664, PAP0111, and PAP0661.

Rural grid exit points are APS0111, CLH0111, COL0111, HOR0331, HOR0661, SPN0331, and SPN0661.

Distribution loss factors

(applying from 1 October 1999, text updated 30 January 2008)

The Distribution Loss Factor is a multiplier that is applied to the energy sales that are metered at the connection to calculate the volume of energy purchased at the Grid Exit Point to supply that connection. This process makes allowance for energy that is "lost" between the Grid Exit Point and the connection. Mathematically, Loss Factor = $1/(1-\text{Loss Ratio})$ where Loss Ratio is the proportion of energy purchases that are "lost" and it is this ratio that is usually published for Distribution Networks.

The proportion of energy lost is higher when the system load is high. Therefore, Loss Factors have been provided to reflect the different loading levels that apply during winter & summer, day and night.

A significant proportion of the energy loss occurs in transformers. Therefore, different sets of Loss Factors have been provided depending on the voltage of metering. With LV (ie 230/400V) metering, losses in the transformer are included, but this is not the case for HV (ie 11kV) metering.

A further significant proportion of the energy loss occurs in the Low Voltage (ie 230/400V) network. Since major customers do not generally make use of the LV network, a further set of Loss Factors are provided for them which exclude the LV network losses.

Orion's distribution network is divided into two zones, based on the season when the peak loadings occur. As the loading patterns vary, so do the Loss Factors. This consideration results in two sets of Loss Factors.

The above considerations result in twenty-four Loss Factors as follows:

Connection Category	Season	Time of Day	Zone A		Zone B	
			Loss factor	Loss Code	Loss factor	Loss Code
General Connections (LV metering)	May to Sep	Day	1.061	} AGL	1.062	} BGL
		Night	1.055		1.060	
	Oct to Apr	Day	1.052		1.075	
		Night	1.047		1.070	
Major Connections (LV metering)	May to Sep	Day	1.040	} AML	1.060	} BML
		Night	1.037		1.058	
	Oct to Apr	Day	1.036		1.071	
		Night	1.033		1.066	
Major Connections (HV metering)	May to Sep	Day	1.027	} AMH	1.047	} BMH
		Night	1.024		1.045	
	Oct to Apr	Day	1.023		1.057	
		Night	1.021		1.053	

Note

Zone A is the area supplied from the following grid exit points ADD0111, ADD0661, APS0111, BRY0111, BRY0661, CLH0111, COL0111, ISL0331, ISL0661, MLN0661, PAP0111, and PAP0661.

Zone B is the area supplied from the following grid exit points HOR0661, HOR0331, SPN0331, and SPN0661.

Day is from 8 am to 12 midnight; **Night** is from 12 midnight to 8 am.