ORC Evidence Requirements for the Vegetable Industry

The Vegetable Industry Owner Reimbursement Costs (ORC) Evidence Framework only applies to Owners from the Vegetable Industry.

ORCs for the Vegetable Industry are calculated using the formula for Annual Short Rotation Crops (schedule 6, part 4.4.12 of the Emergency Plant Pest Response Deed, 2016). This formula is: ORC = (A - B) + C + D + E - F + G.

A definition for each component of this formula is provided in the following table.

Regional differences will need to be taken into account throughout the Evidence Framework.

Key terms used in this evidence framework

Term	Definition
Authorised Person(s)	Where key variables of the ORC need to be assessed, potentially having significant financial or 'moral hazard' implications, an Authorised Person should be used in the determination of the appropriate value. Such persons: (a) should be appropriately authorised under relevant legislation and procedures (usually of the Affected jurisdiction); (b) may be involved in (without limitation) certification, audit or determination of key information as appropriate; (c) should be appropriately qualified for the specified roles; (d) need not be a government employee, but must meet relevant independence and other relevant probity requirements; (e) should be sourced from existing expertise, such as qualified agronomists or hail assessors, where possible and appropriate.
Jurisdictional legislative instrument	A State or Territory's gazetted notice of a regulation.
Owner(s)	Owner(s) of a Crop, Crops or sub-group of Crops, or a property, which is/are subject to a Response Plan, or their authorised representative(s).
Relevant Parties	In respect of the taking of a decision or action, the Parties which may be affected (or, where they are an Industry Party, the members of which may be affected) by the decision or action.

Note this list is not comprehensive. Refer to clause 1.1 of the EPPRD for definitions of capitalised words/terms (excluding names) used in this framework

Revision history

Version	Date issued	Amendment Details	
		Element(s)	Details
Draft	Draft	All New ORC Evidence Framework. Provided to AUSVEG for consideration and approval. Provided to government Parties for endorsement 16 February 2017.	
1.0	6 April 2017	All	Endorsed by AUSVEG, all government Parties and PHA Board.

	Definition of elements from the EPPRD	Evidence requirements (in hierarchical order)	Additional information
Α	Estimated farm gate value of the Crop(s) destroyed = a * y * p		
	a = area of Crop destroyed or a and y might refer to number of units expected to be sold, such as number of punnets of seedlings.	Certification/assessment of the area of Crop destroyed by an Authorised Person using one of the following methods: 1. Accurate property maps. 2. Satellite imagery. This will depend on the specific jurisdictions' capacity to access such information. 3. Aerial photographs. This will depend on the specific jurisdictions' capacity to access such information. 4. On ground surveys will be conducted using GPS data if the previous options are not available at the time of incursion and Crop destruction.	 Satellite imagery must have high enough resolution to specify growing area if it is to be used. Aerial photographs may be available from the Owner. Owners often take aerial photos before buying property or expanding current property borders. Alternatively, aerial photographs and property maps may be obtained using the resources provided in <i>Appendix 1: Online state resources for definition of growing area.</i> On-ground photographs may provide additional supporting information for the calculation of area. An on the ground survey will also be required to verify the type of Crop being grown on the area at the time of the incursion (Crop types represented by the vegetable industry are provided in <i>Appendix 2: Crop types in the vegetable industry</i>). This will be carried out by an Authorised Person. The jurisdictional legislative instrument (by whatever name) will identify the quarantine zone, and the Lead Agency must hold appropriate records of the area of Crop affected.
	y = yield or a and y might refer to number of units expected to be sold, such as number of punnets of seedlings.	Certification/assessment of the yield by an Authorised Person using one of the following methods: 1. Actual yield determined by harvesting the Crop.	Where the whole district is seriously affected by the pest being eradicated and regional yields are clearly distorted, the yield information should take this into account.

Definition of elements from the EPPRD	Evidence requirements (in hierarchical order)	Additional information
The yield estimate is to take into account the type of Crop destroyed.	 Expected yield for the current season will be calculated for the individual Owner from their auditable historical yield data records averaged over 5 years. Packer/processor records for the appropriate varieties. Local area/regional average will apply for the varieties used by the Owner, averaged over 5 years. State/Territory 5 year averages will apply for the varieties used by the Owner. If records for the appropriate varieties are not available, 5 year averages for the most similar crop type will be used following the hierarchy of methods 1-5. 	 Expected yield will take into account the type of Crop (e.g. brassica vs cucurbit) and variety/cultivar of Crop destroyed. The stage of the cropping cycle when the Crop is destroyed must also be taken into account. Crop types represented by the vegetable industry are provided in Appendix 2: Crop types in the vegetable industry. Yields recovered through insurance policies and any insurance premiums are not to form part of ORCs. Data for local area/regional average and State/Territory averages may be available from industry groups or local agronomists. If this data cannot be sourced, regional average yield data may be accessible from ABARES or other sources on a Local Government area basis. http://www.agriculture.gov.au/abares/data Owners claiming above expected average yields, prior to destruction, must produce auditable records of above average returns in previous years to justify additional amounts in ORCs. New property Owners will need to obtain permission from previous Owners for data release if they wish to use records for the property for their ORC assessment. Average district yield over 5 years is an appropriate time period to use. In exceptional environmental circumstances, e.g. prolonged drought, Relevant Parties may decide to take the average over a longer period, for example, 10 years.

Definition of elements from the EPPRD	Evidence requirements (in hierarchical order)	Additional information
		Yield data may be supplied in number of bins, pallets, cartons/ha, kg/ha, bunches, or tonnes per year.
 p = farm gate price e either: the average market price for the season in the region or marketplace where normal sales take place; or where there are signed contracts with the price stipulated on the contract, the contract price less any transport or selling costs. 	 If there is a contract in place this will be used for Crops applicable under the contract. This will be carried out according to each Crop type. This will be adjusted, according to contract terms, using the quality and grading values of the previous season if required. These records are typically kept by the Owner. If there is no contract price in place, the price paid for the current Crop will be sourced from regional packer records for the current season (spot price). Where packer records are not available for the current season, the market price will be calculated for the individual Owner from their auditable historical records or regional packer records (spot price) from the Owners standard market source, averaged over 5 years. Where auditable historical records are not available, verifiable regional averages of packer records (spot price) over 5 years will be sourced from appropriate market source(s) which will be determined at the time of the incursion. 	 If there are commodities grown on the same property that fall under contract and non-contract arrangements, the contract price will be paid for the volume of commodity in the contract and the price for the remaining commodity will be the spot price (Appendix 3: Determining Farm Gate price using contracts and/or spot prices). There are a range of processes available to Owners for selling products. Owners may choose to: Pick and pack their own produce; Pick and then send their produce to a packing house; Have direct contact with retailers; or Sell through a merchant/agent. A percentage of the Industry has contract in place with retailers, but this varies between regions. The prices for roadside/farmers market sales would be the same as if they were sold wholesale. The wholesale agents in key markets (such as the Melbourne, Sydney or Brisbane Markets) are the best place for current or historical regional packer records (spot price), by request. An additional source of information such as Market Information Services may also provide accurate/averaged data (Appendia): Determining Farm Gate price using contracts and/or spot prices).

	Definition of elements from the EPPRD	Evidence requirements (in hierarchical order)	Additional information
			 Owners claiming above average prices must produce auditable records of above average prices in previous years to justify additional amounts in ORCs. Appendix 4: State bodies representing vegetable growers in Australia provides a list of state industry organisations that
			could provide regional averages.Farm gate price data may be accessible from ABARES.
В	= Harvesting costs plus any other costs normally associated with Crop production between the time of Crop destruction and selling or harvesting. This is to include normal treatment or packaging and handling costs on farm for some harvested produce (for example washing or dipping of products).	Best practice production, harvest and packaging costs will be determined by State/Territory Agriculture Departments in consultation with Relevant Parties, best practice groups and agronomists using applicable local/district contract prices and in accordance with relevant parts of <i>Appendix 5: Schedule of gross margins for commodities and cost of production calculator.</i> Where an Owner has auditable records to support a different gross margin (possibly due to different harvesting methods or systems) specific reference to an Owners individual gross margin will be used as appropriate.	 This element includes harvesting and other production costs that would normally be incurred between the time of harvesting and selling if the Crop was not destroyed. Best Practice Groups are typically State/Territory based, as detailed in Appendix 4: State bodies representing vegetable growers in Australia. Different Crop types will have an impact on harvesting time and harvesting method. Crop types represented by the vegetable industry are provided in Appendix 2: Crop types in the vegetable industry.
С	= Direct costs associated with the Response Plan incurred by the Owner but not normally incurred as a production expense – including cleaning of equipment or glasshouses etc.	This will depend on what the Response Plan requires and will need to be calculated on an Incident by Incident basis. A standard schedule of regional gross margins will be used to estimate normal costs based on standard local/district or regional contract prices as appropriate. This will be determined by State/Territory Agriculture Departments in consultation with Relevant Parties, best practice groups and agronomists and in accordance with relevant parts of Appendix 5: Schedule of gross margins for commodities and cost of production calculator. Where an Owner has auditable records to support a different gross margin (possibly due to different harvesting methods or	 Required actions/treatments by Owners need to be specifically defined in the Response Plan. The legislative order needs to identify the actions/treatments required that are to be undertaken by the Owner. When destruction is carried out by the Lead Agency costs associated with this destruction will not be included as part of the ORC calculation.

	Definition of elements from the EPPRD	Evidence requirements (in hierarchical order)	Additional information
		systems) specific reference to an Owner's individual gross margin will be used as appropriate. A schedule of costs additional to those specified in <i>Appendix 5:</i> Schedule of gross margins for commodities and cost of production calculator that are required of the Owner by the Response Plan will be developed by the Lead Agency in consultation with Relevant Parties at the time of the Incident.	Values provided in Appendix 5: Schedule of gross margins for commodities and cost of production calculator provide estimates. In the event of an incursion where ORCs may be paid, the values will be reviewed and updated by agreement of the Relevant Parties to allow current and case specific information to be used.
D	= Replacement value of any capital items destroyed as part of the Response Plan.	Replacement value of any capital items destroyed will depend on what the Response Plan requires and will need to be calculated on an Incident by Incident basis. Prices will be sourced from local/district suppliers e.g.: Landmark; Elders; Roberts; or Other specialist suppliers at the time of the Incident. Costs are to be determined in accordance with a schedule of market values for items expected to be destroyed, replacing like with like, and agreed by Relevant Parties at the time of developing a Response Plan.	 The legislative order needs to identify items requiring destruction. Known capital items requiring destruction need to be specified in a Response Plan. However, some items cannot be replaced until the fallow period ends. The price of these items is likely to increase during the fallow period. As such, an appropriate rate of input price inflation must be determined and applied to these prices. Subsequent values are then depreciated. Replacement value of any capital items destroyed as an unintended consequence of an eradication program need to be included in this element, but will not necessarily be specified in the Response Plan. Unintended destruction of capital items will be dealt with on an Owner-by-Owner basis. Capital items for the vegetable industries could potentially include: Irrigation lines Picking bags Harvest bins Trellis - wire and posts

	Definition of elements from the EPPRD	Evidence requirements (in hierarchical order)	Additional information
			 Protective covers and support structures Nets Replacing 'like with like' means that the Owner is reimbursed for the value of the asset that was destroyed under the Response Plan – it is the cost to replace the same type of item (i.e. same make, model, size etc), and takes into account the age of the item destroyed through a method of depreciation. If there is an opportunity following the Response Plan for modernising or upgrading the growing facilities – for example, closer Crop plantings, or hydroponics, the level of ORC is to be related strictly to replacing the asset that was there. If an Owner wants to introduce more technology, or better infrastructure, for example, the Owner must cover additional costs.
E	= Loss of profits from a Response Plan requirement to fallow land or keep glasshouses empty. These ORC are only available where the Response Plan requires a fallow period that exceeds ten weeks and are to be restricted to loss of profits for a maximum of three years. Profits are to be based on standardised gross margins data from State/Territory departments of agriculture, based on 'best practice'. However, in some cases, for example where glasshouses are involved, profit estimates may need to be based on documentation of profits from previous years.	A standard schedule of regional gross margins will be used to estimate costs based on "best practice." This will be determined by State/Territory Agriculture Departments in consultation with Relevant Parties, best practice groups and agronomists and in accordance with relevant parts of <i>Appendix 5: Schedule of gross margins for commodities and cost of production calculator.</i> Where an Owner has auditable records to support a different gross margin (possibly due to different harvesting methods or systems) specific reference to an Owner's individual gross margin from 5 prior years of production will be used as appropriate.	 Element "E" only applies if a period of bare fallow is required by the Response Plan. The primary goal should be to reduce the costs of the response to all Parties including the Affected Parties. There needs to be a mechanism to enable people to remain productive when there is an incursion. Unless bare fallow is required, it will be assumed that a grower will grow an alternative crop as the first option to remain productive (see framework element "F"). Where the response allows, suitable alternative crops such as those typically used in rotation, will be identified from business records for previous crops

	Definition of elements from the EPPRD	Evidence requirements (in hierarchical order)	Additional information
			produced. Gross margins information for different regions may be sourced from state agencies (Appendix 4: State bodies representing vegetable growers in Australia), industry organisations, or agronomists.
			Values provided in Appendix 5: Schedule of gross margins for commodities and cost of production calculator are estimates. In the event of an incursion where ORCs may be paid, the values will be reviewed and updated by agreement of the Relevant Parties to allow current and case specific information to be used. The assumptions used to develop the gross margins will have to be considered when referring to them (e.g. age of planting, planting density).
			Owner's auditable records can be verified against vegetable industry benchmarking data (e.g. ABARES data) for some commodities.
			Where an Owner wishes to claim a higher profit margin, suitable evidence may include tax returns and farm management information with averaged profit over 5 years.
F	= Profits that could be earned from the next best alternative enterprise, produced with the same resources, on the land where the Crop is destroyed and permitted by the Response Plan – as determined in	Standardised returns to be estimated for Crops relevant to the affected region. An Authorised Person is then to assess each enterprise for the suitability of each relevant Crop, including farm records and the experience and equipment normally available to the Owner.	Element "F" only applies if the Response Plan allows for an alternative crop to be grown. If bare fallow is required, framework element "F" does not apply. Instead, element "E" applies to the ORC.
	accordance with the definition of 'F' in clause 4.4.11.	Gross margins for alternate Crops are to be standardised, based on 'best practice' and estimated by State/Territory Agriculture Departments.	The EPPRD assumes that the Owner will choose to run the next most profitable enterprise that could be undertaken with

	Definition of elements from the EPPRD	Evidence requirements (in hierarchical order)	Additional information
		Examples of gross margins for Crops in specific regions are shown in Appendix 5: Schedule of gross margins for commodities and cost of production calculator. Where an Owner has auditable records to support consistent performance above a regional average then specific reference to an Owner's individual gross margin will be used as appropriate.	existing capital equipment. However, some requirements are: The alternate crop must be a crop the farmer is set up for and confident/experienced to grow. The alternate crop choices will depend on the EPP, host range and persistence in the environment. The alternate crop must not be affected by the EPP or allow it to persist. Choice of alternate crop will need to be made at the time based on crop cycle, seasonal conditions and EPP. Recommendations could be made by Authorised Persons with agronomic experience in the region. This applies only in the year in which the Crop is destroyed. Where a strict fallow in subsequent years is not required under the Response Plan—that is, any alternative enterprise can be undertaken except production of the Crop concerned in the Response Plan, ORCs are not to include the difference in profits for the Crop in question and any alternative enterprise.
G	= Value of any stored produce on farm destroyed as a directive of the Response Plan — as for annual broadacre Crops.	This will depend on what the Response Plan requires and will be calculated on an Incident by Incident basis. Price and yield to be determined using the applicable method as described in "A". The amount of any stored produce will be determined by inspection at the time of the Incident.	 Stored produce may include stored vegetable seed. Assessment is made by an Authorised Person.

Appendix 1. Online state resources for definition of growing area

Aerial pictures and property maps may be obtained using the following resources:

http://services.land.vic.gov.au/landchannel/jsp/reports/ReportsIntro.jsp

https://www.landgate.wa.gov.au/corporate.nsf/web/data

https://www.dnrm.qld.gov.au/mapping-data/maps

http://www.lands.nt.gov.au/land-info/ntlis

http://dpipwe.tas.gov.au/land-tamania/geodata-services

Appendix 2. Crop types in the vegetable industry

AUSVEG represents the following vegetable Crop types:

Alliaceae – eg. Leek

Amaranthaceae - eg. Beetroot,

Apiaceae - eg. Carrot, celery, parsley, parsnips

Asterceae - eg. Lettuce

Brassicaceae - eg. Broccoli, Brussel sprouts, cabbage, cauliflower, swede,

Cucurbitaceae - eg. Cucumber, marrows, pumpkin, squashes, triambles and trombones, zucchini

Fabaceae – eg. Beans (French and Runner), peas (Green and Snow)

Poaceae - eg. Sweet corn

Solanaceae - eg. Capsicum, chilli, eggplant, potatoes, peppers.

For a full list of Crops represented by AUSVEG under the EPPRD, refer to schedule 7 of the EPPRD: http://www.planthealthaustralia.com.au/biosecurity/emergency-plant-pest-response-deed/

Appendix 3. Determining farm gate price using contracts and/or spot prices

Contract and spot prices are calculated based on Farm Gate Value. Farm Gate Value means the value of produce produced on farm and sold at the first point of sale (e.g. the local market) less the estimated or actual transport costs from farm gate to first point of sale. For the purposes of this Deed, Farm Gate Value is the equivalent of Local Value of Production (LVP).

The spot price is the current market price at which an asset is bought or sold for immediate payment and delivery. Spot prices are continually changing – they fluctuate according to varying supply and demand. The spot price used for valuation of 'p' should be market prices on the day of Crop destruction. Eg. Owner A has a contract in place for 500 kg of pumpkins. The contract is used to determine the farm gate price (value of the yield as set out in the contract, minus the transport and any packing costs). Owner A also grows 500 kg of capsicum, but does not have a contract in place for this yield. The spot price for capsicum is determined on the day of capsicum Crop destruction by contacting relevant packers or local markets to determine the spot price per tonne or kilogram for the product.

Therefore, total p = (contract price of 500 kg pumpkin + spot price of 500 kg capsicum) – transport and packing costs.

Spot prices for produce that is not under contract may be found in daily or weekly price reports generated by large wholesale markets in each jurisdiction. Some resources are listed below: The Melbourne Wholesale Fruit and Vegetable Market http://www.melbournemarkets.com.au/
The Sydney Grower's Market http://www.sydneymarkets.com.au/markets/growers-market/growers-overview.html

Brisbane Markets Limited http://www.brisbanemarkets.com.au/
Perth Market City http://www.perthmarket.com.au/produce-information-database-0
Market Information Services http://www.marketinfo.com.au/

Appendix 4. State bodies representing vegetable growers in Australia

AUSVEG Vic http://ausvegvic.com.au/

AUSVEG SA http://ausveg.com.au/AUSVEGSA/ausvegsa.htm

NT Farmers Association http://ntfarmers.org.au/

Growcom (Queensland) http://www.growcom.com.au/

Tasmanian Farmers & Graziers Association http://www.tfga.com.au/

Vegetables WA http://www.vegetableswa.com.au/

The New South Wales Farmers Association http://www.nswfarmers.org.au/

Appendix 5. Schedule of gross margins of commodities and cost of production calculator

In the vegetable industry expenditure and yield etc. does not equate with what is made back, e.g. over supply can lead to low prices. To address this problem a Cost of Production Calculator is provided on the InfoVeg database found on the AUSVEG website, which can be used by the Lead Agency as a guide for calculating gross margins and cost of production.

Cost of Production Calculator:

http://ausveg.businesscatalyst.com/Default.aspx?PageID=4998795&A=SearchResult&SearchID=9940903&ObjectID=4998795&ObjectType=1

Values provided are estimates only and are to be used as a guide. In the event of a response where ORCs may be paid, the values will be reviewed and updated by agreement of the Relevant Parties to allow current and case specific information to be used.

Examples of production costs for consideration by the Lead Agency (based on 2013 ABARES data for capsicum production)

http://www.dpi.nsw.gov.au/ data/assets/pdf file/0016/470023/Capsicum-gross-margin-budget.pdf

NB. Input costs per tonne of production vary considerably between different products and regions. Hard-cooked vegetables, such as potatoes and carrots are generally less expensive to grow than salad vegetables or soft-cooked vegetables such as broccoli and beans. As production systems become more mechanised there are more opportunities for gains through increased size and economies of scale.

Vegetables grown in greenhouses have a larger start-up cost, although productivity is higher.

Process - Crop Production	Unit Cost	Total Cost	
Fertiliser - Single Super	450 kg/ha \$ 0.48 /kg	\$ 216.00	
Calcium Nitrate	300 kg/ha \$ 0.76 /kg	\$ 228.00	
Potassium Nitrate	360 kg/ha \$ 1.32 /kg	\$ 475.20	
Magnesium Nitrate	400 kg/ha \$ 1.28 /kg	\$ 512.00	
Micro Nutrients	5 L /ha \$ 6.50 /L	\$ 32.50	
Ground/Bed Preparation	15 L/hr 4 hr/ha \$ 1.15 /L	\$ 69.00	
Lay Mulch/Drip Tape	12 L/hr 1.3 hr/ha \$ 1.15 /L	\$ 17.94	
Transplanting	12 L/hr 7.0 hr/ha \$ 1.15 /L	\$ 96.60	
Chemical Applications	12 L/hr 7.0 hr/ha \$ 1.15 /L	\$ 96.60	

Fertiliser Applications	12 L/hr 4.0 hr/ha \$ 1.15 /L	\$ 55.20
Insecticide (2 applications)	1.0 kg/ha \$ 48.60 /kg	\$ 97.20
Insecticide (2 applications)	0.75 L/ha \$ 11.00 /L	\$ 16.50
Insecticide (1 application)	0.3 L/ha \$ 64.65 /L	\$ 19.40
Insecticide (1 applications)	1.7 L/ha \$ 161.16 /L	\$ 273.97
Insecticide (2 applications)	0.3 L/ha \$ 54.40 /L	\$ 32.64
Fungicide (2 applications)	2.2 kg/ha \$ 12.00 /kg	\$ 52.80
Fungicide (2 applications)	3.0 kg/ha \$ 8.24 /kg	\$ 49.44
Sunscreen	2 applications 25.0 kg/ha \$ 5.60 /kg	\$ 280.00
Water	Drip Irrigation 4 ML/ha \$ 60.00 /ML	\$ 240.00
Tractor Driving (1 person)	28 hr/ha \$ 25.00 /hr	\$ 700.00
Lay Mulch/Drip Tape (2 people)	1.3 hr/ha \$ 25.00 /hr	\$ 65.00
Transplanting (3 people)	7 hr/ha \$ 18.00 /hr	\$ 378.00

Process – Harvest, Packing and Transport	Unit Cost	Total Cost
Harvest (4 people)	44 hr/ha \$ 18.00 /hr	\$ 3,168.00
Wash, Grade & Pack (4 people)	750 cartons/ha \$ 0.52 /carton	\$ 1,560.00
Electricity/Gas	4 ML/ha \$ 36.00 /ML	\$ 144.00
Packing Shed & Coolroom	44 hr/ha \$ 1.05 /hr	\$ 46.20
Packaging/ Package Materials	3000 cartons/ha \$1.60 /carton	\$ 4,800.00
Freight/Transport Truck (96 spaces)	\$ 115.00 space \$1.20 /carton	\$ 3,593.75
Bin Hire 14 days	50 bins/ha \$0.40 /bin	\$ 280.00
Bin Pick up	10 L/hr 6.0 hr/ha \$ 1.15 /L	\$ 69.00