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91429R

NZQA
NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

QUALIFY FOR THE FUTURE WORLD
KIA NOHO TAKATŪ KI TŌ ĀMUA AO!

Level 3 Geography, 2019

91429 Demonstrate understanding of a given environment(s) through selection and application of geographic concepts and skills

9.30 a.m. Tuesday 19 November 2019
Credits: Four

RESOURCE BOOKLET

Refer to this booklet to answer the questions for Geography 91429.

Check that this booklet has pages 2–15 in the correct order and that none of these pages is blank.

YOU MAY KEEP THIS BOOKLET AT THE END OF THE EXAMINATION.

RELEVANT GEOGRAPHIC CONCEPTS

Environments
Environments may be natural and / or cultural. They have particular characteristics and features, which can be the result of natural and / or cultural processes. The particular characteristics of an environment may be similar to and / or different from another. A cultural environment includes people and / or the built environment.

Perspectives
Perspectives are ways of seeing the world that help explain differences in decisions about, responses to, and interactions with, environments. Perspectives are bodies of thought, theories, or world views that shape people's values and have built up over time. They involve people's *perceptions* (how they view and interpret environments) and *viewpoints* (what they think) about geographic issues. Perceptions and viewpoints are influenced by people's *values* (deeply held beliefs about what is important or desirable).

Processes
Processes are a sequence of actions, natural and / or cultural, that shape and change environments, places, and societies. Some examples of geographic processes include erosion, migration, desertification, and globalisation.

Patterns
Patterns may be spatial (the arrangement of features on the earth's surface) or temporal (how characteristics differ over time in recognisable ways).

Interaction
Interaction involves elements of an environment affecting each other and being linked together. Interaction incorporates movement, flows, connections, links, and interrelationships, which work together and may be one-way or two-way interactions. Landscapes are the visible outcome of interactions. Interaction can bring about environmental change.

Change
Change involves any alteration to the natural or cultural environment. Change can be spatial and / or temporal. Change is a normal process in both natural and cultural environments. It occurs at varying rates, at different times, and in different places. Some changes are predictable, recurrent, or cyclic, while others are unpredictable or erratic. Change can bring about further change.

Sustainability
Sustainability involves adopting ways of thinking and behaving that allow individuals, groups, and societies to meet their needs and aspirations without preventing future generations from meeting theirs. Sustainable interaction with the environment may be achieved by preventing, limiting, minimising, or correcting environmental damage to water, air, and soil, as well as considering ecosystems and problems related to waste, noise, and visual pollution.

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The resources continue on the following page.

SOLAR POWER PRODUCTION

RESOURCE A: Introduction to solar energy production

Solar power has advantages for developed countries with growing

power losses during transmission via cables increase with distance.

RESOURCE B: Background to solar farms

A solar farm is a large collection of interconnected solar panels

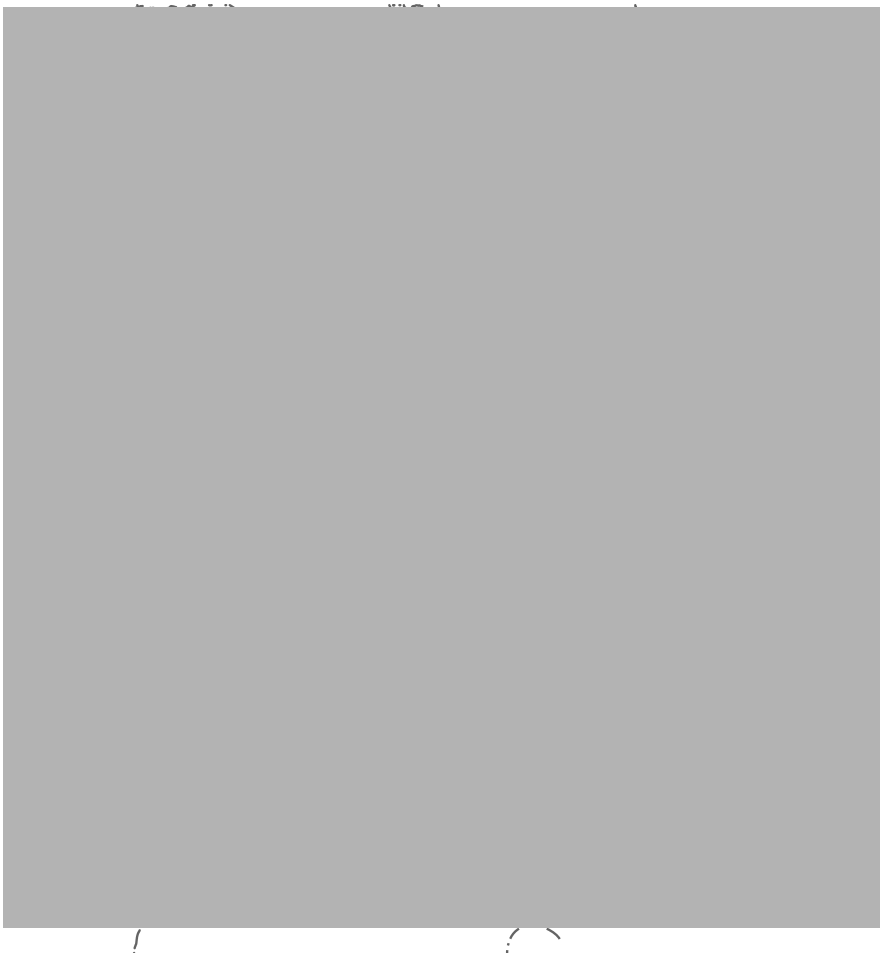
personal solar panels on their rooftops.

THE ENVIRONMENT OF ITALY

RESOURCE C: Location

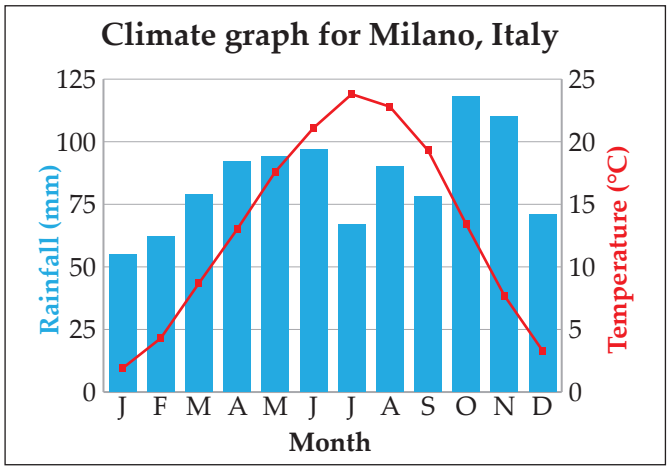
Italy is located in southern Europe and comprises the long, boot-shaped Italian peninsula. [redacted]

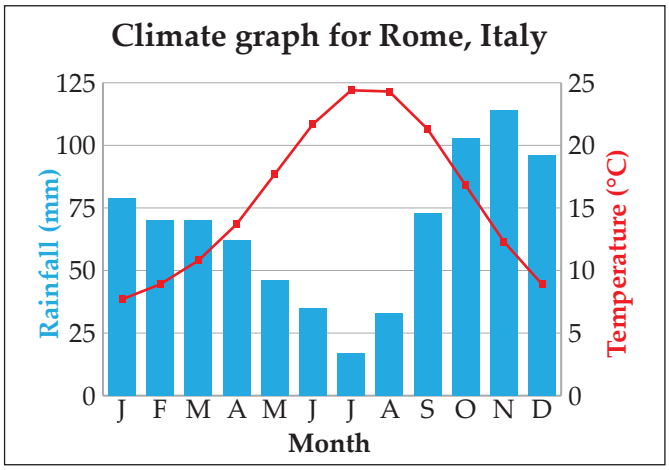
RESOURCE D: Physical map of Italy



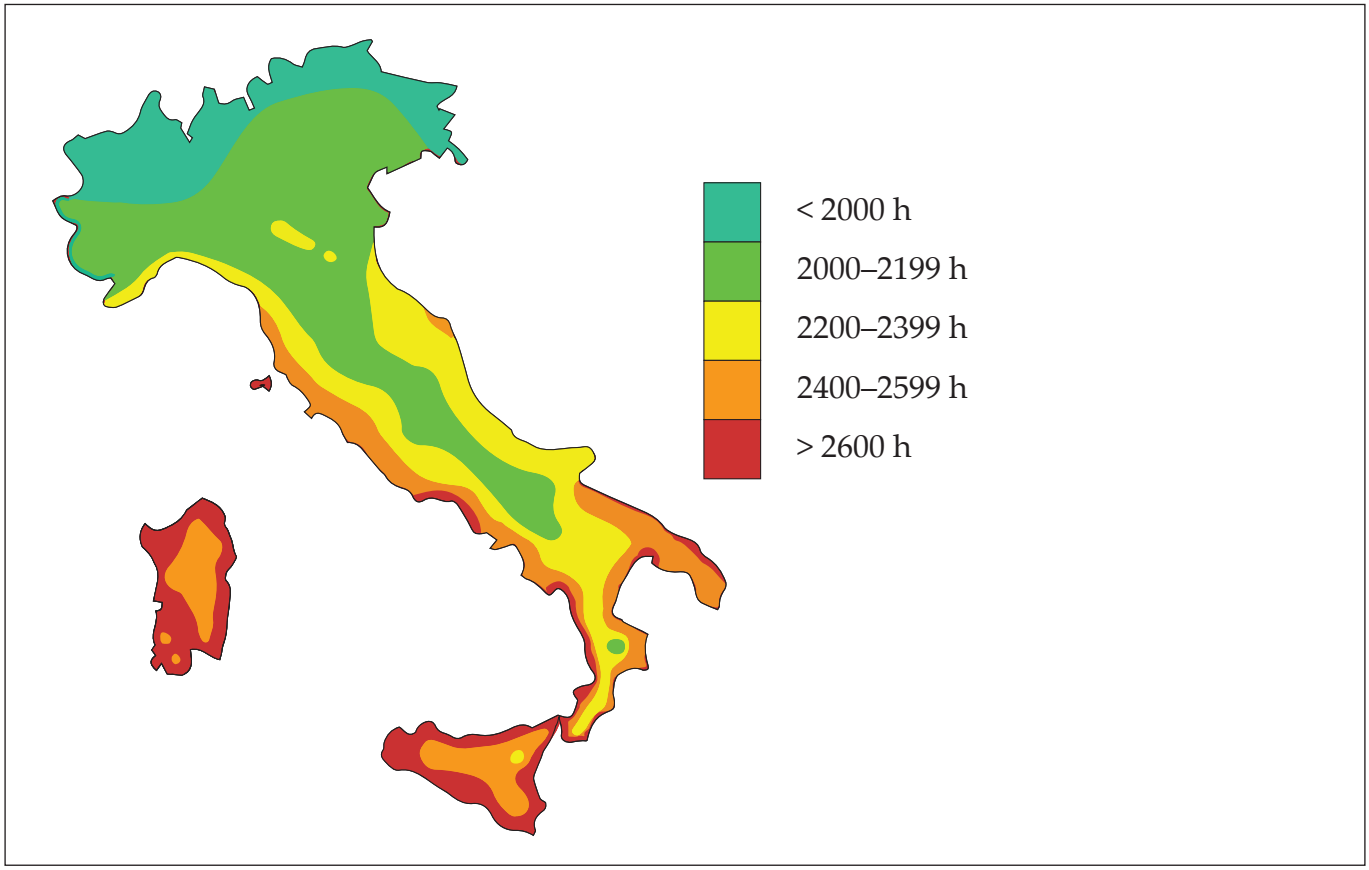
RESOURCE E: Italy's climate

Due to the country's length, Italy's climate [redacted] in the afternoon to night hours.





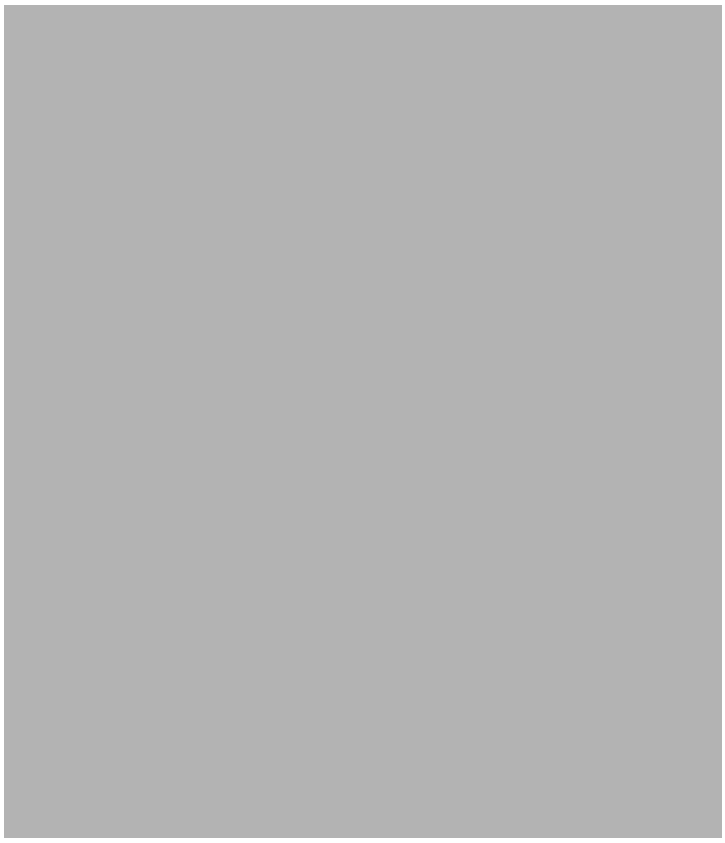
RESOURCE F: Average annual sunshine hours in Italy



RESOURCE G: Italy's marginal agricultural land

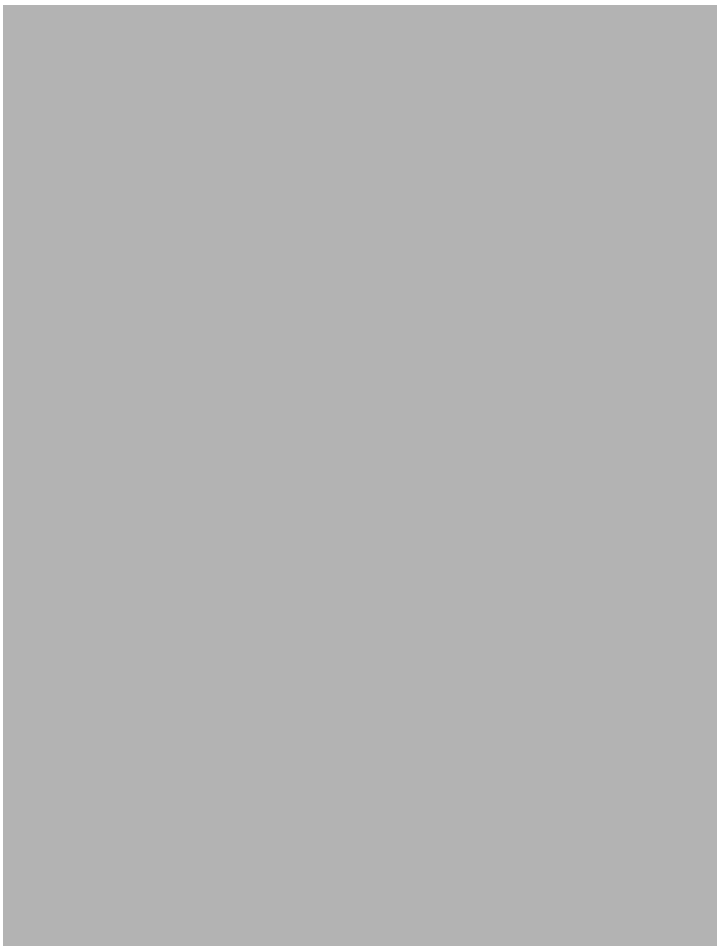
RESOURCE H: Population of Italy

Italy is the fourth most populous European Union



RESOURCE I: Solar potential of Italy

Insolation is the solar radiation

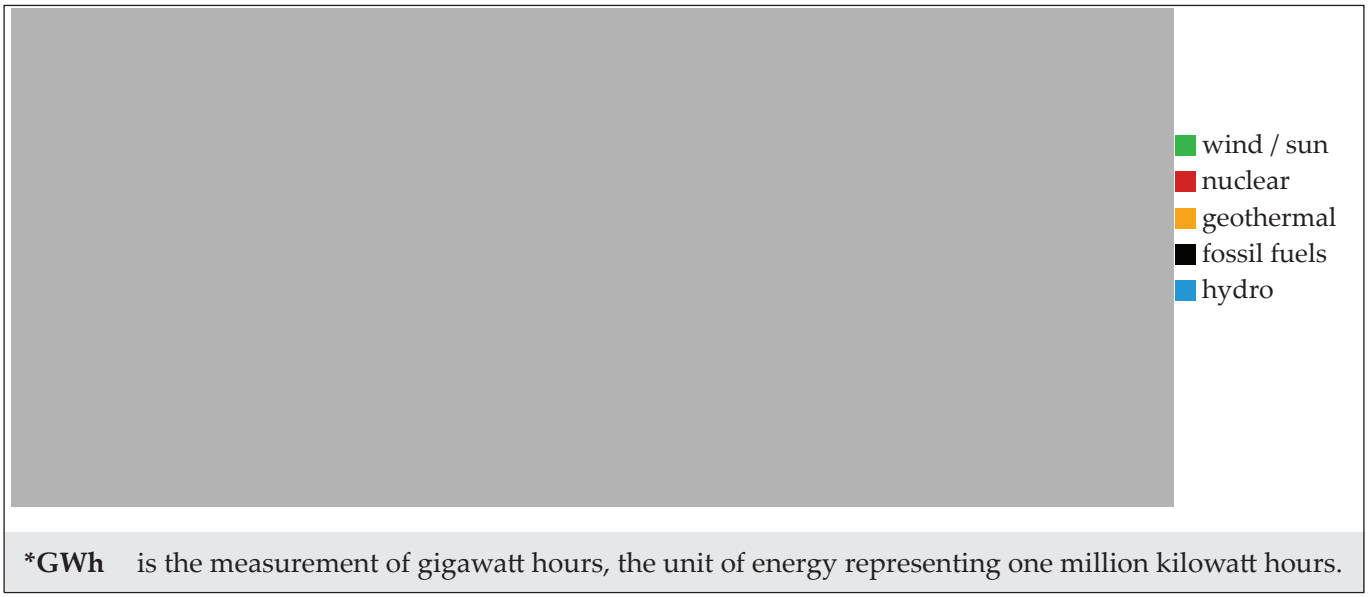


ITALY'S CHANGING ENERGY DEMANDS

RESOURCE J: Italy and power generation

Italy's electricity demands [redacted] renewable means by 2020.

RESOURCE K: Electricity production methods in Italy 1883–2012

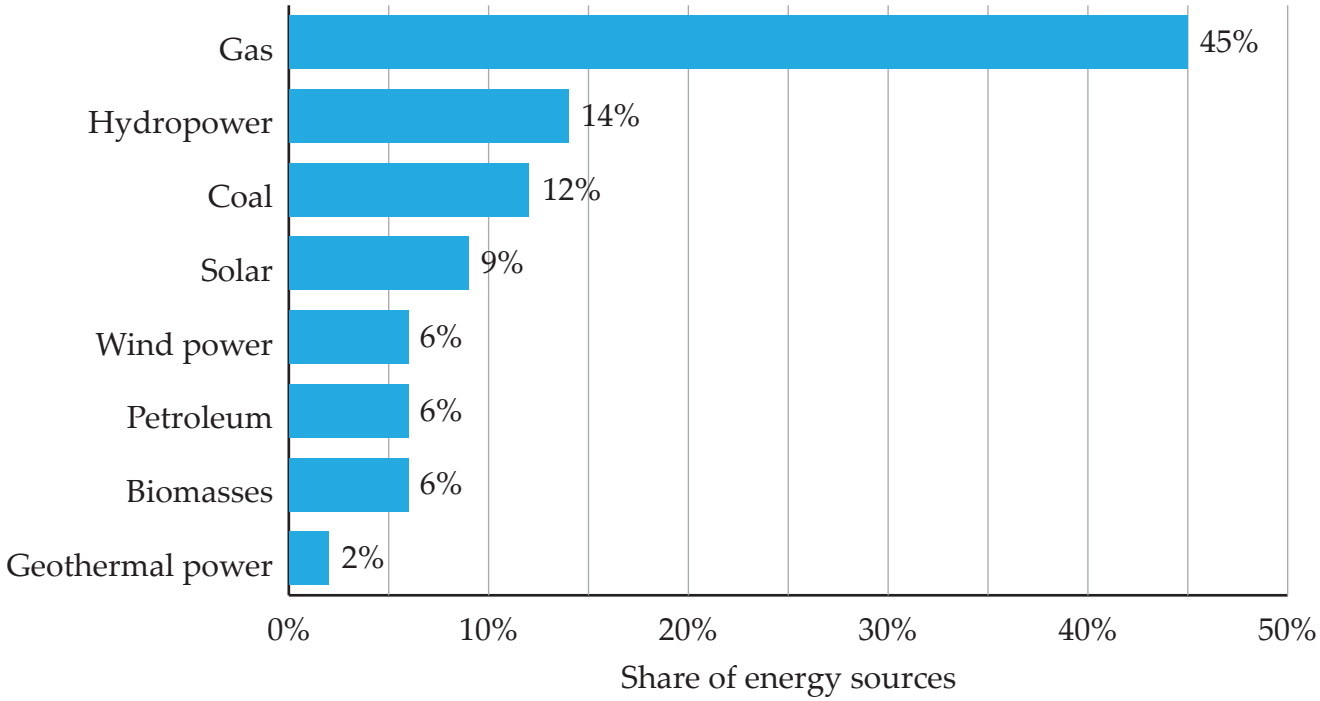


***GWh** is the measurement of gigawatt hours, the unit of energy representing one million kilowatt hours.

RESOURCE L: Gross electricity production by type within Italy 2010–2016

Electricity generation (GWh)	2010	2011	2012	2013	2014	2015	2016
Hydro (water)	54 406	47 756	43 854	54 671	60 256	46 969	44 257
Thermal (natural gas, oil, and coal)	236 624	234 160	223 153	198 646	182 087	198 238	205 718
Wind	9 125	9 856	13 407	14 897	15 178	14 843	17 668
Solar (photovoltaics)	1 905	10 795	18 861	21 588	22 306	22 942	22 104

RESOURCE M: Electricity production methods in Italy 2017



THE FUTURE OF SOLAR POWER IN ITALY

RESOURCE N: Italy's greenhouse gas emissions

$MtCO_2e$/year	is the abbreviation for million tonnes of carbon dioxide emissions per year.
***LULUCF**	is the abbreviation for 'land use, land use change and forestry' that increases the removal of greenhouse gases (including carbon dioxide) in the atmosphere.

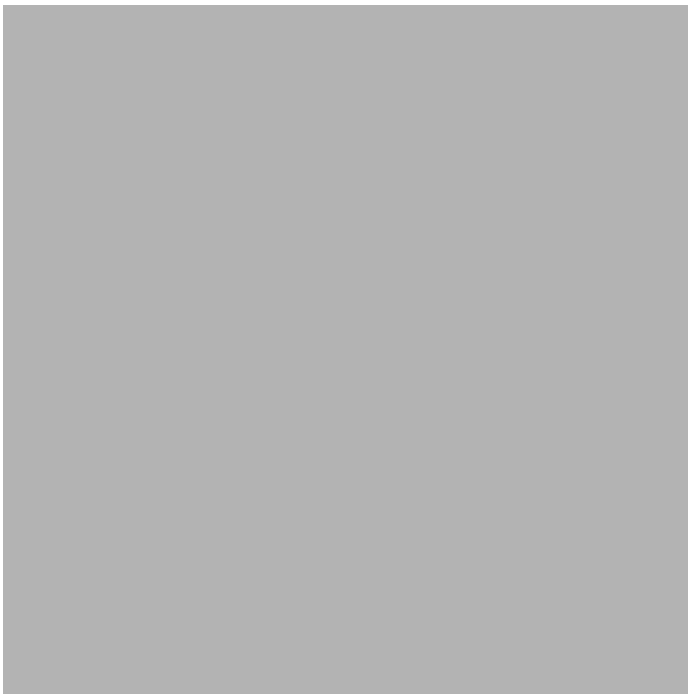
RESOURCE O: The Paris Agreement

The Paris Agreement is

renewable sources by 2030.

RESOURCE P: Solar parks – not the brightest idea?

Globally, the construction of solar energy parks



can live in the new conditions.

RESOURCE Q: The push to go solar

Italy has had a boom in solar power plants,

the cost of transmission.

Acknowledgements

Material from the following sources has been adapted for use in this examination:

Resource A

Text: https://www.theecoexperts.co.uk/solar-panels/best-conditions-generating-energy

P. Jones and D Comfort, 'Solar Farms: Why do we need them?', *Geography Review* vol 27, no 3 (2014), pp 17–19.

Image: https://insights.jumoreglobal.com/wp-content/uploads/2018/07/Eni_Italy_gas_solar_wind_750_422_80_s.jpg

Resource B

Text: P. Jones and D Comfort, 'Solar Farms: Why do we need them?', *Geography Review* vol 27, no 3 (2014), pp 17–19.

Image: https://commons.wikimedia.org/wiki/File:Photovoltaic_power_station_diagram.svg

Resource C

Text: https://en.wikipedia.org/wiki/Italy

Image: OCHA (https://commons.wikimedia.org/w/index.php?curid=32295915), CC-BY-3.0.

Resource D

Image: http://www.alearningfamily.com/main/italy-physical-map/

Resource E

Text: https://en.wikipedia.org/wiki/Climate_of_Italy

Data: https://en.climate-data.org/europe/italy/lazio/rome-1185/

https://en.climate-data.org/europe/italy/lombardy/milan-1094/

Resource F

Image: https://commons.wikimedia.org/wiki/File:Sunshine_duration_in_Italy.png. Public domain image.

Resource G

Image: https://www.researchgate.net/figure/Map-showing-the-spatial-distribution-of-the-three-land-types-classifying-agricultural_fig4_323423867

Resource H

Text: http://worldpopulationreview.com/countries/italy-population/

https://en.wikipedia.org/wiki/Italy

Image: https://commons.wikimedia.org/wiki/File:Map_of_population_density_in_Italy_(2011_census)_alt_colours.jpg

Resource I

Text: https://energyeducation.ca/encyclopedia/Insolation

Image: https://commons.wikimedia.org/w/index.php?curid=15474826.

Resource J

Text: https://en.wikipedia.org/wiki/Electricity_sector_in_Italy

http://www.nortonrosefulbright.com/knowledge/publications/66177/european-renewable-energy-incentive-guide-italy (accessed March 2019)

Resource K

Image: https://commons.wikimedia.org/w/index.php?curid=29723745

Resource L

Data: https://www.terna.it/en-gb/sistemaelettrico/statisticheeprevisioni/datistatistici.aspx

Resource M

Data: https://www.statista.com/statistics/873552/energy-mix-in-italy/

Resource N

Image: https://www.climate-transparency.org/wp-content/uploads/2017/07/B2G2017-Italy.pdf

Resource O

Text: https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement

https://www.iddri.org/en/publications-and-events/blog-post/eu-gets-set-increase-its-paris-climate-pledge

Resource P

Text: https://www.theguardian.com/sustainable-business/solar-power-parks-impact-environment-soil-plants-climate

http://www.iea-pvps.org/fileadmin/dam/public/report/statistics/IEA-PVPS_-_A_Snapshot_of_Global_PV_-_1992-2017.pdf

Image: https://eo.ucar.edu/kids/green/cycles6.htm

Resource Q

Text: D. Redfern, 'Solar Power in Southern Italy'. https://www.hoddereducation.co.uk/magazines/magazines-extras/geography-review-extras

http://www.nortonrosefulbright.com/knowledge/publications/66177/european-renewable-energy-incentive-guide-italy (accessed March 2019)

https://www.enelgreenpower.com/media/news/d/2018/06/the-italian-solar-renaissance-

Image: https://16iwyl195vvfgoqu3136p2ly-wpengine.netdna-ssl.com/wp-content/uploads/2017/04/2749637742_783c9c6563_o-1200x900.jpg