

**For Teachers:** Please have the students read the sentences one at a time and correct their pronunciation of each sentence then have them repeat after you. Wait until after they read the sentence (use the number in place of the missing word) to have the students choose the correct answer to fill in the blank. When the students finish the article, move on to the further questions.

## 4[C] – Desert Power

10.2(4C)A2E

- As the problem of <sup>地球温暖化 (ちきゅうおんだんか)</sup> global warming <sup>悪化 (あつか) して</sup> gets worse, <sup>政府 (せいふ)</sup> governments around the world are <sup>探 (さが) している</sup> looking for ways to cut the <sup>量 (りょう)</sup> amount of <sup>二酸化炭素 (にさんかたんそ)</sup> carbon dioxide <sup>作 (つく) り出 (だ) されている</sup> being produced.
- Now, a group of 20 <sup>ドイツの</sup> German companies have <sup>～した</sup> come up with <sup>～を提案 (ていあん) する</sup> a plan to use the Sahara Desert in North Africa to <sup>提供 (ていきょう) する</sup> provide clean <sup>電力 (でんりょく)</sup> electricity to Europe.
- <sup>～によれば</sup> According to Gerhard Knies of the Desertec Foundation, which is <sup>創設 (そうせつ)</sup> running <sup>運営 (うんえい) している</sup> the project, “Within <sup>計画 (けいかく)</sup> six hours, deserts <sup>～以内 (いない) で</sup> receive <sup>受 (う) け取 (と) る</sup> more energy from the sun than humankind can <sup>人類 (じんるい)</sup> consume <sup>使 (つか) い果 (は) たす</sup> within a year.
- ” The companies hope to use this energy to <sup>創造 (そうぞう) する</sup> create electricity in a way that will not <sup>害 (がい) する</sup> harm <sup>環境 (かんきょう)</sup> the environment.

**Further Questions&A** \* Ask student to answer the question on their own at first. If the student can't answer correctly, have him look at the last page and read the “example answer” for the question. Have the student try to memorize the answer, if it's too long or difficult, you should divide the sentence into 2 or 3 parts to make it easier to remember. Once they have memorized the answer, the teacher should ask the question one last time so that the student can practice answering. Also if you find any mistakes, please mark the page and let me know ASAP.

- 1) Why have governments been looking for ways to cut the amount of carbon dioxide being produced? <sup>せいふ</sup> なぜ政府は二酸化炭素の排 出 <sup>はいしゅつ</sup> を削減 <sup>さくげん</sup> する方法 <sup>ほうほう</sup> を探 <sup>さが</sup> しているのですか。
- They are looking to cut it, because global warming is getting worse.*
- 2) How much energy do deserts receive from the sun?
- <sup>さばく</sup> 砂漠はどのくらいのエネルギー資源 <sup>しげん</sup> を太陽 <sup>たいよう</sup> から得 <sup>え</sup> ていますか。
- They receive more energy than humankind can consume within a year.*
10. When people think of <sup>太陽熱 (たいようねつ)</sup> solar energy, they usually think of <sup>太陽電池板 (たいようでんちばん)</sup> solar panels, which <sup>転換 (てんかん) する</sup> convert <sup>直接 (ちよくせつ) に</sup> sunlight directly into electricity.
- The Desertec plan is different. The foundation <sup>基金 (ききん)</sup> plans <sup>計画 (けいかく) する</sup> to build a <sup>列 (れつ)</sup> line of <sup>発電所 (はつでんしょ)</sup> solar power stations in the desert.
- Solar power stations work <sup>～を使うことによって</sup> by using the strong desert sunlight to <sup>変 (か) える</sup> turn water into <sup>蒸気 (じょうき)</sup> steam.
- This <sup>蒸気 (じょうき)</sup> steam then <sup>その時には</sup> turns <sup>回転 (かいてん) させる</sup> turbines to create electricity. Solar power stations are not new, and four stations like the ones Desertec plans to build <sup>ずっと作 (つく) り出 (だ) している</sup> have been producing electricity in the desert in California for the last two <sup>10 年間 (ねんかん)</sup> decades.

14. Desertec, however, plans to build many more solar power stations and send the electricity <sup>しかしながら</sup> produced from <sup>～から作(つく)り出(だ)された</sup> the Sahara Desert to Europe <sup>～を通(とお)って</sup> through <sup>動力(どうりょく)</sup> power lines.
15. power lines = <sup>動力(どうりょく)</sup> 機械(きかい)を動かす <sup>うご</sup> 力(ちから) <sup>タービン</sup> turbines = <sup>りゅうすい</sup> 流水、<sup>じょうき</sup> 蒸気、<sup>ちから</sup> ガスの <sup>かいてん</sup> 力で <sup>げんどうき</sup> 回転する原動機

### Further Questions&A

16. 3) How is the Desertec plan different from most solar energy plans?
17. <sup>おお</sup> 多くの <sup>たいようこうはつでん</sup> 太陽光 <sup>けいかく</sup> 発電の <sup>けいかく</sup> 計画と <sup>そういてん</sup> Desertec の <sup>なん</sup> 計画の <sup>～の代(か)わりに</sup> 相違点は何ですか。
18. *They will build solar power stations instead of solar panels.*
19. 4) How long have power stations <sup>～のような</sup> like <sup>使(つか)われてきた</sup> the ones Desertec wants to use <sup>been used</sup> ?
20. Desertec が <sup>しよう</sup> 使用したいと <sup>のぞ</sup> 望んでいるような <sup>はつでんしょ</sup> 発電所 <sup>つか</sup> はどのくらい <sup>過去(かこ)～年間(ねんかん)</sup> 使われていますか。
21. *Solar energy stations have been used in California for the past two decades.*

22. According to Desertec, solar power stations have many good points compared with solar panels. They <sup>～と比(くら)べて</sup> are able to <sup>～することができる</sup> produce electricity in much <sup>より多(おお)い</sup> larger <sup>分量(ぶんりょう)</sup> quantities, and they are also able to <sup>備蓄(びちく)する</sup> store <sup>熱(ねつ)</sup> the sun's heat, <sup>～するのを可能(かのう)にする</sup> allowing <sup>～と同(おな)じように</sup> electricity to be produced at night <sup>as well as</sup> during the day.
23. Moreover, the power stations are much <sup>その上(うえ)</sup> cheaper <sup>より安(やす)い</sup> to build <sup>～と比例(ひれい)して</sup> relative to <sup>量(りょう)</sup> the amount of electricity <sup>彼らが作った</sup> they produce. Desertec says that its <sup>企画(きかく)</sup> project <sup>供給(きょうききゅう)する</sup> could <sup>電気(でんき)～までに</sup> provide <sup>15 percent of Europe's electricity by 2050.</sup>

### Further Questions&A

24. 5) What percentage of Europe's <sup>電気(でんき)の</sup> electrical <sup>需要(じゅよう)</sup> needs <sup>can the project provide</sup> can the project provide?
25. ヨーロッパの <sup>なん</sup> 何 <sup>でんき</sup> パーセントの <sup>じゅよう</sup> 電気の <sup>けいかく</sup> 需要を <sup>きょうききゅう</sup> この計画は <sup>供給</sup> できますか。
26. *It could provide 15 percent of Europe's electricity by 2050.*

27. Not <sup>～ではない</sup> everybody <sup>支(ささ)える</sup> support the new <sup>計画(けいかく)</sup> plan . Some say that it would be better to <sup>集中(しゅうちゅう)する</sup> concentrate <sup>住宅(じゅうたく)</sup> on producing solar panels for <sup>houses</sup> in Europe.
28. Others say that the power stations will need too much water. Desertec, however, <sup>～からもたらされた</sup> says that water would be <sup>brought from</sup> the ocean and that electricity would be <sup>取(と)り除(のぞ)く</sup> used to <sup>塩分(えんぶん)</sup> remove <sup>the salt</sup> from this water.
29. Some of this water could then be used by <sup>地元(じもと)の</sup> local <sup>農家(のうか)</sup> farmers for growing <sup>作物(さくもつ)</sup> crops . In this way, the people in the <sup>地域(ちいき)</sup> countries <sup>建(た)てられた</sup> where the stations <sup>are built</sup> would also <sup>利益(りえき)</sup> profit <sup>from the plan.</sup>

### Further Questions&A

30. 6) Why do some people not support Desertec's plans? (Pick up the sentence from the paragraph.)
31. <sup>なんにん</sup> なぜ <sup>ひとびと</sup> 何人かの人々は <sup>けいかく</sup> Desertec の <sup>しじ</sup> 計画を <sup>支持</sup> していないのですか。
32. *Some say that it would be better to concentrate on producing solar panels, others say the power stations will need too much water.*

33. 7) How could people who live in the countries where the stations are built profit from the plan? はつでんしょ ちいき す ひとびと けいかく りえき え どのようにして発電所の地域に住む人々が計画から利益を得られますか。
34. *Desertec would remove the salt from water and give some to the local farmers.*

**\*Choose the correct answer from these choices.**

35. (41) The Desertec Foundation めざしている aims to Desertec 基金は…にめざしている。
36. 1 encourage a group of 20 German companies to clean up the Sahara Desert. 励 (はげ) ます
37. 2 make use of 利用 (りよう) する carbon dioxide 二酸化炭素 (にさんかたんそ) found みつかった in North Africa to produce clean energy.
38. 3 use the desert 砂漠 (さばく) sun to provide energy without 与 (あた) える damaging ～なしで 損害 (そんがい) を与える the environment 環境 (かんきょう).
39. 4 find a way to lessen the 減 (へ) らす total 全体 (ぜんたい) の amount of electricity that people 総額 (そうがく) consume 消費 (しょうひ) する each year. 毎年 (まいとし)
40. (42) How will Desertec's solar power stations create electricity?
41. Desertec たいようねつはつでんしょ の太陽熱発電所はどのように電気を作り出しますか。 でんき つく だ
42. 1 By using solar 板 (いた) panels to make electricity from sunlight. ～を加熱 (かねつ) することによって
43. 2 By heating water to make steam that will turn タービン turbines.
44. 3 By sending hot water from the Sahara Desert to Europe. 結 (むす) びつけることによって
45. 4 By connecting Africa's power system with the one in California.
46. (43) What is one difference between solar panels and solar power stations? 違 (ちが) い
47. たいようでんちばん たいようねつはつでんしょ 太陽電池板と太陽熱発電所の ひと ちが 違いは何ですか。 なん
48. 1 Solar panels can 熱 (あつ) くなる heat larger 大 (おお) きい quantities of water. 分量 (ぶんりょう)
49. 2 Solar panels are able to produce much more energy.
50. 3 Solar power stations are more 普通 (ふつう) の common in Europe.
51. 4 Solar power stations continue 続 (つづ) ける to work after dark.
52. (44) According to Desertec Desertec によると…
53. 1 the 費用 (ひよう) cost of solar panels is too high for many people in Europe.
54. 2 the project will help 地方 (ちほう) の local people by providing water for 作物 (さくもつ) crops.
55. 3 the power stations will 必要 (ひつよう) とする require large amounts of salt to work 正確 (せいかく) に properly.
56. 4 the countries where the power stations are built will get 無料 (むりよう) の free electricity.
57. (45) Which of the 次に述 (の) べる事柄 (ことがら) following statements about Desertec's plan is true?
58. Desertec の計画 (けいかく) について 次 (つぎ) に述べる こと どの事柄 (ことがら) は真実 (しんじつ) ですか。 ～に似 (に) ている ～で運営 (うんえい) しているもの
59. 1 The power station will be similar to ～を熱 (ねつ) するため ones operating in California.
60. 2 Electricity from the power stations will be used to heat water at night. ほとんどの
61. 3 The power stations will provide most of Europe's electricity by 2050.

62. 4 Some people say that the power stations should be built in Europe.

## Review Questions

63. 1) Why have governments been looking for ways to cut the amount of carbon dioxide being produced?

64. *They are looking to cut it, because global warming is getting worse.*

65. 2) How much energy do deserts receive from the sun?

66. *They receive more energy than humankind can consume within a year.*

67. 3) How is the Desertec plan different from most solar energy plans?

68. *They will build solar power stations <sup>～の代(か)わりに</sup> instead of solar panels.*

69. 4) How long have power stations <sup>～のような</sup> like the ones Desertec wants to use <sup>使(つか)われてきた</sup> been used?

70. *Solar energy stations have been used in California <sup>過去(かこ)～年間(ねんかん)</sup> for the past two decades.*

71. 5) What percentage of Europe's electrical needs can the project provide?

72. *It could provide 15 percent of Europe's electricity by 2050.*

73. 6) Why do some people not support Desertec's plans?

74. *Some say that it would be better to concentrate on producing solar panels, others say the power stations will need too much water.*

75. 7) How could people who live in the countries where the stations are built profit from the plan?

76. *Desertec would remove the salt from water and give some to the local farmers.*

解答: (41)3 (42) 2 (43) 4 (44) 2 (45) 1

|     |                                                                                          |              |  |  |  |  |                   |
|-----|------------------------------------------------------------------------------------------|--------------|--|--|--|--|-------------------|
| 136 | 名)実験<br>じっけん                                                                             | experiment   |  |  |  |  | イクスぺ<br>リメント      |
| 137 | 名)服<br>ふく                                                                                | cloths       |  |  |  |  | クロウズ              |
| 138 | 副)それにもかか<br>わらず                                                                          | nevertheless |  |  |  |  | ネヴァー<br>ザレス       |
| 139 | ～を行 <sup>おこな</sup> う                                                                     | conduct      |  |  |  |  | カンだク<br>トゥ        |
| 140 | 動)～を繰り返 <sup>くりかえ</sup> す                                                                | repeat       |  |  |  |  | リピート              |
| 141 | 動)適 <sup>てき</sup> 応 <sup>おう</sup> する、～<br>を適 <sup>てき</sup> 応 <sup>おう</sup> させる           | adapt        |  |  |  |  | アダプト              |
| 142 | 名)同僚<br>どうりょう                                                                            | colleague    |  |  |  |  | かりーグ              |
| 143 | 名)ごみ                                                                                     | garbage      |  |  |  |  | ガービッ<br>ヂ         |
| 144 | 副)完全 <sup>かんぜん</sup> に                                                                   | completely   |  |  |  |  | カンプリ<br>ートウリ<br>ィ |
| 145 | 動)～を発 <sup>はつ</sup> 明 <sup>めい</sup> す<br>る、でっちあ <sup>あ</sup> げる                          | invent       |  |  |  |  | インヴェ<br>ントウ       |
| 146 | 副)実 <sup>じつ</sup> のところ、<br>実 <sup>じっ</sup> 際 <sup>さい</sup>                               | indeed       |  |  |  |  | インディ<br>ードウ       |
| 147 | 名)目的 <sup>もくてき</sup> 地                                                                   | destination  |  |  |  |  | デスティ<br>ネーション     |
| 148 | 形)快 <sup>かい</sup> 適 <sup>てき</sup> な                                                      | comfortable  |  |  |  |  | カンファ<br>ァタ<br>ブル  |
| 149 | 動)～に影 <sup>えい</sup> 響 <sup>きやう</sup> を<br>あ <sup>あ</sup> た <sup>た</sup> え <sup>え</sup> る | influence    |  |  |  |  | インフル<br>ーエンス      |
| 150 | 動)～を修理する<br>名)修理                                                                         | repair       |  |  |  |  | リペアー              |